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ABSTRACT The recommendations of the Chico State College Task Force on Instructional Media are presented, along with several supporting position papers. The major recommendations listed are that: 1)all learning resources, such as the library, the media center, and the computer system, should be coordinated into a functioning integrated system; 2)faculty rights and responsibilities with regard to instructional media should be clarified by the Faculty Senate and the administration of the College; 3)technology should remain a tool to be used to achieve learning goals; 4)hardware and facilities should remain as flexible as possible in order to be adaptable to change; and 5)faculty should be kept informed of and encouraged to participate in instructional media developments. The 22 supporting papers deal with general aspects of instructional media, instructional systems, operations associated with instructional media, and the role of the faculty with respect to learning and instructional media. (PB)

FINAL REPORT
# of the
TASK FORCE
on
INSTRUCTIONAL
MEDIA

COMPUTER
LIBRARY
MEDIA

CHICO STATE

MAY 1972

FINAL REPORT
OF THE
TASK FORCE ON INSTRUCTIONAL MEDIA

May 12, 1972

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INTRODUCTION

All academic programs on or off the campus will probably be directly or indirectly related to this report. The major recommendation of the Task Force on Instructional Media is that:

> "Learning resources, e.g., Media Center, Library, Computer System, common distribution systems for the resources both on and off the campus, etc., should be coordinated so that they become a functioning integrated system."*

To achieve such an objective there are many different administrative arrangements and a bewildering variety of technological aids that might be used. The Task Force has questioned the organizational and funding implications of integrating functions associated with instructional media. It has also asked what hardware is best; it has tried to identify limiting factors in software development. Faculty rights and responsibilities and their relationship to copyright laws posed particularly difficult questions.

The Task Force looked at questions dealing with the learning process, such as, what are the goals and objectives of the faculty and students, and what is the best way of measuring whether or not they have been achieved? The Task Force also considered questions that have no definitive answer about the future shape of educational institutions and how the form of information distribution may change in the next decade.

In this report we have tried to answer some of these questions and have made recommendations. With other questions the situation is either so complex or uncertain that we have simply attempted to clarify them by providing support papers or useful references.

Successful functioning of an integrated instructional media system depends on informed administrators, faculty and students. We hope that this report provides useful information for everyone and that in the immediate future it will offer a basis for achieving the objective of a functioning integrated instructional media system.

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*Submitted by the Task Force on Instructional Media to the Educational Policies Committee on April 3, 1972, and adopted as a part of the Academic Master Plan (1972-80), Section IV, C, 4, by the Faculty Senate on April 20, 1972.

RECOMMENDATIONS

The recommendations outlined below are designed to provide a basis for the development of an effective system for utilizing instructional media in the next decade. The Task Force is providing for future consideration a number of specific and general objectives in Support Papers [see papers A(3) and A(4).

I. Learning resources, e.g. Media Center, Library, Computer System, common distribution systems for the resources both on and off the campus, etc., should be coordinated so that they become a functioning integrated system. (See papers under B.)

  A. The functions of the Media Center, the Library, and Computer System, and distribution of information on and off campus, should be integrated under one office. The Task Force is not making a specific organizational recommendation since a variety of arrangements might achieve the objective, but the Task Force is making a recommendation that there be someone or some office that has the primary responsibility of coordinating learning-teaching resources. A Task Force on Instructional Media is not intended to perform the coordinating administrative function, but it sees a clear need for such coordination. [See paper B(1).]

  One part of an integrated system should be a Faculty Instructional Research Center [see paper B(4)] which has as some of its functions:

    (i) Helping faculty develop and select software

    (ii) Providing workshops in the use and preparation of all learning resources, e.g. computer terminals, microprint, audio and TV cassettes, etc.

    (iii) Coordinating the impressive faculty expertise in instructional media so that the faculty may learn from each other.

  B. We recommend that an important function of an integrated instructional system is to insure compatibility of hardware and to coordinate the development of software. [See papers under C.]

    (1) The Media Center should increase its emphasis on AV-TV software development, working very closely with the faculty.

    (2) The Library and Media Center should give the setting up of

carrels for autotutorial functions a high priority on equipment lists. They should also move expeditiously to integrate print and nonprint information resources. [See papers B(3).]

(3) The learning resources of the Computer System should be more closely linked to the Library and Media Center.

(4) The interface between academic units and the learning resources should be clearly defined so that the extent of centralization and decentralization is clarified.

   (a) Policies concerning the development and use of teaching aids should be established.

   (b) Policies outlining the responsibilities for purchase and maintenance of equipment used in distributing and/or preparing nonprint information should be clarified.

   (c) Policies outlining the responsibilities for the purchase, maintenance and use of computers and calculators should be publicized.

   (d) Policies governing funding responsibilities as they relate to the quality and use of software should be clearly delineated.

C. Since the effective functioning of an integrated instructional system depends markedly on the distribution of information on and off campus, and since there are a variety of modes that can be considered, we recommend that distribution problems and formulation of general policy related to distribution receive immediate attention.

(1) Experimentation with a variety of distribution modes, KCHO-FM, KIXE, Cable, open and closed circuit Broadcasting, etc., should be made and decisions made on the best way of handling on and off campus distribution. A campus cable network which can accommodate distribution of audio, video, and digital information should be considered.

(2) Development plans in Continuing Education, including External Degrees, should be coordinated with the delivery systems likely to be available. Policies related to the fiscal and programmatic relationships and commitments should be clarified. Serious consideration should be given to the possibility of

establishing microwave links in northern California by means of which Chico and U.C., Davis, Travis Air Force Base, and other areas could be connected and which would provide many opportunities for joint educational efforts by the institutions in northern California. [See papers C(3) and C(7).]

(3) The College should be especially aware of the distribution potentialities of Cable TV within the community. To the extent that it is feasible, the College should obtain air time on Cable TV and be prepared to provide a valuable educational public service.

II. The faculty rights and responsibilities with regard to instructional media should be clarified by the Faculty Senate and by the Administration of the College.

A. Before mediated courses are developed, and before media and computer software development takes place that might be copyrightable, there should be an agreement between the faculty member, or in some cases students, and the College, as to the rights that all participants have to the use of and related profit derived from the instructional software.

B. An administrative official or office should have the responsibility of passing on the copyrightability of materials prepared using state funds. He should likewise be alert to the current status of copyright laws and the liability problems caused by breaking these laws.

C. The Faculty Senate should have a committee that concerns itself with policies governing faculty rights and responsibilities in the preparation and use of instructional media. Policies governing ownership and copyright guidelines should be formulated which can serve as the basis for case by case written agreements. [See paper D(1).]

D. Faculty workloads should be based on guidelines which are flexible enough to adapt to the inordinate time required for software development and to the unusual formats that are likely to result from introducing innovative programs. [See paper C(6).]

III. Technology should be the tool to reach certain goals, and these goals in a campus as diverse as Chico may be difficult to get agreement on. However, the Task Force recommends that the following goals be adopted and evaluated: [See paper D(2).]

(i) Enhancement of the learning of the students by offering a larger variety of media through which to acquire knowledge and by providing an efficient information retrieval system.

(ii) Improvement of the teaching situation by making an abundance of supporting materials available, making their production or procurement efficient, and utilizing the time saved by using media to release teachers for educationally worthwhile activities.

IV. In the selection of hardware, in the planning for the new Library and other campus buildings, and in the development of Continuing Education Programs, the likelihood of major long range changes in student interest and in information distribution, should be kept in mind, and purchases and programs should be as adaptable as possible. [See paper C(4).]

V. The Task Force recommends that it continue its present role until an office or individual is assigned the coordination function. After an assignment is made, an Instructional Media Advisory Committee should be established.

VI. The Task Force recommends that faculty be kept informed as to current campus development in instructional media by means of periodic reports to the faculty. There should also be administrative encouragement of software production and use of instructional media by making available released time assignments in Schools or Departments which would enable the faculty to accomplish specific objectives, perhaps through a mini-grant program, and would make it possible for various units to have faculty designated as media resource persons within units. [See paper C(6).]

SUPPORT PAPERS

The specific objectives or recommendations outlined in one support paper may be in conflict with those in another support paper, or in some cases the objectives cannot be achieved because of present fiscal or personnel limitations. These inconsistencies point out the complexity of the interrelationships and underline the need for overall coordination of policy and procedure. With two exceptions, the support papers are written by Task Force members and are provided for consideration. They do not necessarily represent a Task Force consensus.

Support Paper No. A.(1)

TASK FORCE ON PLANNING FOR AN INTEGRATED INSTRUCTIONAL SUPPORT PROGRAM

by

Donald Gerth

5

TASK FORCE ON PLANNING FOR AN INTEGRATED INSTRUCTIONAL SUPPORT PROGRAM

We are confirming the request that you serve as members of a special task force to address long range planning with respect to an integrated instructional support program including the library, instructional media services as we now know them, and the instructional aspects of computer operations.

As we look to the future, it becomes clear that the technology and support services which are traditional in higher education are in a state of substantial change; it may not be an overstatement to assert that there is a revolution making in the technology which supports higher education. This revolution will make possible the development and support of "delivery systems" which may change our concept of a traditional classroom; libraries, instructional media, computers, and perhaps other modes of operation will have new roles. Chico State College has already been identified as one of three campuses among the California State Colleges to give leadership in this field, for we have recently been offered special budget support for 1972-73. Chancellor Dumke has recently called for specific proposals which address themselves to educational technology. And we can anticipate a role for educational technology in "delivering" education in Northeastern California in the future.

You will be addressing yourselves as a task force to the long term implications of these matters. Much of what we are now doing and will be doing for the next several years is set by our method of organization, by facilities, by budgets, and by attitudes of faculty, students, and the community. The new library, including space for instructional media services, will be completed several years from now. You might initially define a task of thinking from a point three or four years ahead and thereafter in the preparation of a plan or design, including needed budget support, which the college would utilize in the years from 1975 through 1985.

The results of your work should ultimately and upon adoption become a part of the academic master plan of the college. We would ask that you submit a preliminary report by January 15, 1972 in order that this may be considered for inclusion in the academic master plan cycle concluding in April, and that you submit a final report by May 15, 1972.

In pursuing your work you should feel free to consult Dr. Norris Bleyhl, the Director of the Library, and his colleagues; Dr. Edgar Knox, Chairman of the Foreign Languages Department; Mr. Bruce Stowell, Director of the Computer Center; Dr. Lois Christensen, who wrote a Danforth Report paper on this matter; Mr. Robert Griner, Administrative Analyst; Dr. John Safarik, Director of Institutional Research; and others. We are asking Mr. Weintraub to prepare for each of you a binder of materials and literature. You may wish to visit one or more campuses, though there are financial constraints on this. Professor Arnovick is serving as secretary and staff to your task force; last year he completed an initial study of computerization in the Library with Dr. Bleyhl; Professor Arnovick has six units of assigned time for this year's work.

As your deliberations continue you will move into areas of educational policy and long range planning. Thus you may wish to work at times with Dr. Kenneth Edson, the Chairman of the Educational Policies Committee of the Senate and his associates, and Dr. Betty Lou Raker, the Chairman of the Long Range Planning Committee and her associates. As the report of your task force recommends items which are in the realm of educational policy to be incorporated into the academic master plan, the Educational Policies Committee and the Faculty Senate, as is usual, will be involved in their adoption.

President Cazier and I are asking Dean Pennington for the privilege of joining you at your first meeting. We thank you for your willingness to undertake this important task.

Support Paper No. A.(2)

INSTRUCTIONAL MEDIA TASK FORCE INTERIM REPORT
TO THE
EDUCATIONAL POLICIES COMMITTEE

INSTRUCTIONAL MEDIA TASK FORCE REPORT
to
Educational Policies Committee, Faculty Senate

January 20, 1972

The Task Force has addressed itself to the specific questions raised by the Planning Document and has answers that give some idea of our thinking. We are taking a broad look at instructional media, and intend to prepare a more comprehensive statement. Portions of the statement will be available in the next few months while some sections may not be completed until this summer. The following summary will give you an idea of the thinking of the Task Force.

1. The Task Force is attempting to project the future needs in the area of instructional media for the next decade. Obviously, the years immediately ahead are the easiest to deal with since we know the base from which we start. But with each succeeding year the uncertainties mount as unpredictable outside factors modify our projections. Because of these difficulties we will attempt to outline alternatives and try to project a system that is adaptable to change, regardless of the form it will take.

2. We are mainly concerned with the tools and skills required for learning and how they are used. While the faculty play a central role in using instructional media and preparing software, we will indicate student and administration responsibilities as well. The system will not work effectively without coordinated effort. We will propose an organization that can accomplish our objectives.

3. Our report will summarize the current status. A recent study of educational media programs of the California State Colleges revealed that faculties did not know about educational media and their own educational media programs. The Task Force will provide a concise compilation and statement of where we are and recommend that the faculty and students be informed of what they now have and will have by the fall of 1972.

4. Simply providing the instructional media does not insure its effective use, so we have considered developmental and motivational factors. Students and faculty must be aware of the advantages of using certain types of media. Audio tapes have certain advantages over books, and vice versa. We will be recommending a faculty improvement and development center, tied to both campus programs and Continuing Education programs. Suitable instruction for students in the use of instructional media will also be recommended.

5. Time for developing software is a limiting factor in the effective use of instructional media. We will recommend that software development be systematized, that faculty be encouraged to be creative in the software development just as they have been in textbook writing. The Task Force will have a number of policy recommendations with regard to faculty and institutional rights in this regard.

6. The Task Force has been especially sensitive to the need to integrate the entire instructional media system, AV-TV, Library, Computer Center, etc. Greater efficiency and greater effectiveness should result from pooling related needs for hardware and function. At the same time, we have been aware of the need to provide the users with a system that is easy to use. We will be making funding recommendations that we feel will be consistent with a smoothly functioning system.

7. In our report we will concern ourselves with the heart of the educational process. While the Task Force itself represents a diversity of educational philosophy, we are agreed that our main objective is to make effective learning possible, and our main hope is that faculty and students achieve this objective. There may be many routes to this objective, and we expect that our recommendations on instructional media will maximize the options open to faculty and students.

8. The Task Force, with the help of Royd Weintraub, has answered the questions asked in the Planning Document primarily from the viewpoint of the Media Center. It is important to point out that there has been considerable recent progress in this area.

CHICO STATE COLLEGE
School of Natural Sciences
MEMORANDUM

To: Educational Policies Committee
Faculty Senate

April 3, 1972

From: Frank C. Pennington, Chairman
Task Force on Instructional Media

cc: Members, Task Force on
Instructional Media

SUBJECT: AMENDMENT TO THE ACADEMIC MASTER PLAN: GOALS AND POLICIES 1972-80

I met with you on March 23 and pointed out the fact that one of the major concerns of the Task Force on Instructional Media was not mentioned in your Academic Master Plan Statement. Since then the Task Force has discussed the matter and has proposed an amendment to Section IIIC, which reads as follows:

> C. Innovation in instruction. . . .assessing learning, providing resources for development of more effective teaching modes, and incorporating modern instructional media in their programs. Learning resources, e.g. Media Center, Library, Computer System, common distribution systems for the resources both on and off the campus, etc., should be coordinated so that they become a functioning integrated system.

We are in the process of preparing a detailed report which will probably not be available for several weeks. Meanwhile, the members of the Task Force are willing to meet with your committee to discuss the amendment.

FCP:ac

7. *WHAT ACTIONS SHOULD BE TAKEN AS A PRELUDE TO MOVING THE MEDIA SERVICES INTO THE NEW LIBRARY BUILDING? (SPECIAL TASK FORCE)*

   a. *HOW CAN WE INCREASE THE EFFECTIVENESS OF OUR EMPLOYMENT OF OUR MEDIA RESOURCES? (SPECIAL TASK FORCE)*

Reorganization of the Media Center:

The College's Personnel Department has completed a study and made recommendations for reorganization of the Instructional Media Center. A primary goal was the identification of similar areas for consolidation, i.e., similar AV-TV distribution patterns for equipment and graphics-photography. Consolidation of like functions will provide the optimal combination of personnel and facilities. As a result of this study the following actions have been taken:

1. Development of a common booking area for all services
2. Consolidation of staff and facilities for graphics-photography.
3. Distribution of all AV-TV equipment now handled out of a single area.

Before moving into the new facilities, the following personnel changes shoul be made.

1. Consolidation of secretarial staff to provide a common system for bookkeeping, records, etc.

2. A technical position shift from traditional to electronic distribution.

3. As new staff positions become available, there should be a larger staff shift toward material development.

4. Under the present system of job classifications, there are no adequate positions available for media design specialists who can work with both faculty and technical support staff. Suggested job descriptions have been prepared and submitted through the V.P.A.A. and Personnel Department to the Chancellor's Office.

5. The Utah State model for faculty improvement should be considered. Faculty with specific skills could be given release time to work with other faculty or on their own in the development of instructional materials. Media specialists from the I.M.C. would be assigned to work directly with this faculty.

Operation of the Media Center:

A study is being made to computerize various operational aspects of the I.M.C.. Implementation of these recommendations should improve the quality of service given and provide for the following changes:

1. Standardization with the library for check-out procedures, inventory control, etc.

2. Conversion of our media catalog to a punch card listing system, which can be easily updated and printed. Materials listed will be coded to provide descriptions for an eventual data-base system.

3. Interim development of an off-line equipment booking-distribution listing. In the new I.M.C. on-line provision will provide a direct terminal to determine the status and optimum use of all materials and equipment.

The orientation of the Instructional Media Center will shift from a basically "hardware" delivery operation to an increasing emphasis on "software" or materials development. The focus will be in three major areas; improvement of the classroom environment by increased information display and feedback capability, development and retrieval of instructional materials and fulfillment of diverse learning needs by providing individualized instruction. To provide these new services, implementation of the following areas will be considered:

1. The development of a system for collection, cataloging, distribution and retrieval of film and tape materials. This distribution process includes the physical handling of materials as well as electronic distribution by television and audio network. Materials developed by the various departments of the Media Center will be cataloged as either individual elements or complete presentations.

2. The completion of a data distribution system for campus, city and regional use. A feasibility study should be made to determine the specifications for regional data hookups between Chico State College and other institutions within the region.

3. Provisions for self-instruction materials, equipment and carrels is currently being developed. The new I.M.C. will have space for student positions as well as audio dial-access. While conduit and carrels are being provided in the new library, there is need for further planning for actual self-instructional services to be provided in this area.

(7) b. WHAT BUDGETARY IMPLICATIONS ARE ASSOCIATED WITH A MORE EFFECTIVE USE OF MEDIA SERVICES? (SPECIAL TASK FORCE)

Faculty Development:

The costs involved in providing workshops for the staff and faculty will be from our regular budget and funds available for this purpose through the Personnel Department. An annual open house will be offered to familiarize faculty with services which are offered to them. During the next five years, these workshops will develop from basic media skills to more complex mixed media approaches. We plan to emphasize teaching objectives and means of eliciting feedback. The expertise available from the fields of Art, Psychology, Mass Communications, Education, etc., can comprise a necessary pool of talent for faculty development.

Classrooms:

The major area in which campus financial support will be needed is in classrooms. A major deterrent to effacious utilization of media was the availability of reliable equipment permanently installed in classrooms. Two Title VI grants were applied for and received, to develop a basic economical system of facilities within classrooms. Because of these grants, 17 key classrooms can now be equipped with motion picture projectors, slide projectors, overheads, pulse tape recorders, 8mm cartridge projectors and cabinets for housing this equipment. In addition, twenty-one classrooms will be able to receive a range of materials via color television sets. Matching money for these grants was made available through the Dean's Council in conjunction with the Vice President' Office. The college should continue to systematically develop such facilities by again supporting these Title VI grants for 1972-73. To equip an additional 23 classrooms, the projected match requirement is $17,500.00.

Twenty percent of the classrooms will be mediated upon projected completion of these grants. Equipment owned by various units of the college should be consolidated to provide permanent installations in the remaining rooms. This will require an additional construction expenditure for projection booths and control consoles.

The shift to fixed installations will have two effects on the resources of the Instructional Media Center. Service records indicate that fixed equipment has a usable life three times greater than equipment constantly transported from room to room. Secondly, several staff positions which are currently utilized for distribution can be shifted to instructional materials development.

Campus Cable System:

The costs involved in the development of this network have been paid through the regular budget of the Instructional Media Center. Since the advent of a new campus conduit system, these costs are presently being shared by the Computer Center. The sharing of these lines will permit a reduction in the estimated cost to an estimated $16,000.00. This figure includes polyfoam cable for transmission of color signals and high speed digital information, plus multiconductor cable for remote control of equipment

City Cable System:

The major cost involved in the utilization of the State Cable System will be the one-time cost of providing a link between the college and the cable company. This link can be provided as follows:

> A coaxial line strung on city poles for a distance of 1.4 miles. The use of wire will allow transmission of data (television, computer, etc.) in two directions simultaneously. The costs of the installation is estimated to be $1,800.00. The balance of the required electronic equipment has already been purchased.

The savings available in not having to duplicate linkups to residence halls, schools, etc. far exceeds the initial cost in developing a satisfactory link. Serious consideration should be given to its completion as soon as channel availability becomes certain.

Telephone Company Distribution System:

Student remote access to audio materials can be accomplished in one of two ways:

1. Ohio State University chose to purchase and install all the required student carrels, switching equipment, lines and recorders. The cost of this system was $250,000, plus labor and parts required for yearly maintenance.

2. Our approach is to rent standard telephone lines at a cost of $8.00 per line/month plus installation. This rental eliminates capital investment costs for all equipment except the $250.00 cost for each recorder. Maintenance expenses are covered by the phone company and the system can be expanded or limited according to demand. The costs of the recorders can be met from our yearly equipment allotment. Additional funds will be required to pay the monthly telephone charges. Estimated demand may require 5 additional lines per year for the next 5 years for a total of 25 lines. The projected cost for 1971-72 is $400.00, 1972-73 is $800.00, 1973-74 is $1,200.00, etc. Telephone lines not in demand during the summer can be reduced.

Regional Distribution:

Consideration of all materials as a common data pool should be applied on a regional basis. Plans will be formulated to establish a communication network throughout the colleges service region with inter-connect possibilities to adjoining regions. Such a system would permit two-way transmission to regional centers, Junior Colleges, Public Schools, KIXE, etc. Over this common system a full range of materials could be transmitted through the appropriate computer terminal, document display with hard copy capability and media display.

This type of system would permit the resources which are now available on campus to be shared throughout the entire region. The problem of travel throughout our area would be greatly reduced by merely commuting to a nearby regional center and "meeting" via two-way television. Finally, resources can be pooled and shared on a regional basis permitting Chico State College to provide a full range of resources to supplement materials and facilities in other institutions.

A study is currently being conducted to determine the cost involved in the modular development of such a system.

(7) c. WHAT HELP CAN BE PROVIDED TO PROGRAMS WISH TO MAKE BETTER UTILIZATION OF THE MEDIA SERVICES' CAPABILITIES?

In order to provide an increased utilization of media services, several areas need to be developed. Earlier sections of this report alluded to such needs which can be summarized in the following:

Support Staff - Media Design Specialists should be available to work with instructors to develop a range of media based on identified terminal objective and measured by carefully developed tests. These staff members will work with the faculty to translate traditional presentations into mediated packages to be prepared by the Center's graphic artists, photographers and technicians.

Faculty Support Staff - Faculty who possess skills in media related fields should be given release time to work with the Center's staff and other faculty members in the development of materials. Skill areas such as systems design, television production, learning psychology, etc. can provide a valuable resource.

Faculty Development - Workshops will be provided for a range of areas to familiarize faculty with the instructional possibilities of this new media.

Classroom Support - Every effort must be made to provide permanent installations of equipment which will comprise a reliable support system.

Data Base - All materials should begin to be pooled into a common data base. Joint acquisition and cataloging practices will allow faculty to request collection acquisitions on the basis of information and content characteristics, rather than the present dicotomy existing between print and non-print.

Media Accessibility - Print and non-print materials would be far more accessible with the development of a number of services. The range would include telephone and vide access in students rooms, electronic study carrels and regional centers. Faculty-developed material would be easily available for remedial and supplementary information at various locations.

Support Paper No. A.(3)

TASK FORCE OBJECTIVES: COMMENTS AND SPECIFIC STATEMENTS

by

George N. Arnovick

TASK FORCE OBJECTIVES: COMMENTS AND SPECIFIC STATEMENTS*

A. Comments

The objectives of the Task Force can be considered in two separate categories--a broad guideline furnished by the Vice President for Academic Affairs Donald Gerth, and those objectives which are interpreted by the various members of the committee as meeting the overall objective given by the Vice President for Academic Affairs' memo dated October 5, 1971. Dr. Gerth's objectives provide a scope to the Task Force which addresses the problem of long-range implications to new and innovative ways to the development of educational delivery systems. These systems are by definition the integration of the Library, instructional media, and the instructional aspects of computer operations. Within the context of overall objectives as defined by the Vice President for Academic Affairs, an initial task of thinking about the problem from a point three or four years from now, as well as long-term implications, is included. The concern here is to put together those general objectives which provide the scope of the Task Force, with those objectives that have been brought up as operationally desirable within the given time frames by the committee members, in order to fulfill the charge given to the Task Force.

From a preliminary set of Task Force Objectives provided as a memo by G. N. Arnovick, several important statements and comments were submitted by the members of the committee. Since these comments are of particular value and germane to the Task Force mission, their inclusion as part of the Task Force Final Report is appropriate. What follows is a general set of comments, and a listing of specific objectives found appropriate as viewed through divergent opinions of the Task Force members. The comments with respect to Task Force objectives concern themselves with the statement of purpose, why an integrated system, and the meaning of an augmented educational environment.

1. Statement of Purpose

The basic idea behind the statement of purpose is to define a concept as well as perspective for an integrated instructional media and information system. A rationale is presented which covers the following:

1. The educational problem with respect to availability of resource needs to include the professor in the time span of the next ten years, and perhaps beyond.

2. To address ourselves to the educational environment in such a time span. More specifically, how do we distribute, control, disseminate, and create resources to meet the changed educational objectives (the basic assumption here is that there will be change, and we have available the results of parallel studies which delineate methodology, student acceptance, faculty participation, administrative goals, etc.) whereby technology is utilized.

3. To point out where technology is today (state-of-the-art) and where it will be in the time-frame we are contemplating.

4. To define through conceptualization an approach which by its system is a departure from conventional use, production and distribution of media deemed viable in the projected/enhanced educational scheme. That the system serves students, faculty, and administration through future needs and requirements.

In response to "What is the purpose?" Dean Pennington is of the opinion and has stated that any instructional media system should be so designed that it provides easy access to faculty and students both in and out of the classroom. Further, the system should be constrained with regard to available funds, and to consider the essential differences of the various disciplines. George Roseman is of the opinion that the system should be at the disposal of the instructor to obtain through remote means good resource materials at any time from the campus or from remote locations. In support of Roseman's view, he states that planning is a very necessary function, that the design criteria should focus on broad educational goals within the existing or future technologies, and that the system should not be concerned with minutiae. Further, Roseman stresses that the system needs to be flexible so that it can adapt to change. In order to achieve these objectives George Roseman suggests that we use systems analysis as a tool and planning process, and that the proper use of man and machines is not a dehumanizing effort.

Joseph Scott approaches the problem by suggesting that the Task Force estimate what they wish to accomplish through expected faculty and student behavior with regard to the system, and that the environment be designed accordingly. Further, Scott is concerned that administrative efficiency and neatness not be the demanding design criteria, but rather, what would be the effects on the learning and behavior of those who instruct through such a system, and on those who learn from it. In summary, Scott is very emphatic that the learning, behavior, and attitudes of both faculty and students are of primary importance.

William White sums up the statement of purpose with regard to general objectives whereby greater efficiency in extending the educational opportunity is coupled with upgrading the quality of the educational experience through an integrated media system.

Robert Brennan states that the Library is the focal point of resources, and should extend cooperative services in order to achieve the purpose of providing resource materials for instructional requirements.

2. Why an Integrated System?

The proposed definition is that the various components or sub-system parts (Computer, TV, Audio-Visual, Library) be tied together so that they function as a total resource unit--available in a manner which meets the requirements of the user of the system.

Why an integrated system is predicated on the fact we need to design and implement learning resources which must be capable of meeting the "information" needs of a changing society in a manner which is consistent with the goals and values of education for such a society.

If the formal organizational structure of education fails to provide a vehicle or means for gathering, structuring, and disseminating knowledge to the life-style of such a society, alternative resources will be utilized. These can be private, or semi-private (non-profit) organizations who for whatever incentives will make available such knowledge through various means of information utilities.

Evidence of educational specialized services through non-educational organizations is already in existance. For example, the Ohio Computer on-line library data processing center, a non-profit organization, provides services to some 53 universities and colleges within the State of Ohio. A number of universities are obtaining data processing services from commercial data centers as a sole means of computer support. Various companies have succeeded in obtaining contracts from either the State or local district to provide schooling through the payments of vouchers. These trends amply support the concern of both public and private vested interest groups pertaining to educational systems. To assume that higher education is immune to the demands placed on it by the legislature and taxpayers and other citizen/social groups for quality education by means of faster, more thorough, means of the educational process is naive. The answer is simple: either higher education meets these demands on its own initiative, or changes will be made for them through the utilization of competitive systems using, and in many cases having developed, excellent high technology delivery systems.

These conditions place a dilemma on our objectives. Do we wait and see by using a cautious approach whereby learning experience is gathered and evaluated, or plan to go ahead and implement automated systems? A compromise is probably the best alternative. Instead of small experimental systems whose progress is measured in evaluating past performance, a system commitment that is capable of modification seems to be the best approach. This implies that these systems must be designed to be flexible with respect to performance and hardware growth.

There are other vital aspects of why an integrated system must consider economics. To state beforehand that the system must be more economical than current piecemeal instructional media would be a mistake. System costs must be proforma measured against educational variables to include ease of tying systems together, what effect this would have to enhance learning on a broad distributed basis, how are the development costs amortized versus use compared with individual conventional units, etc. These factors then must be weighed against the probability that learning will be increased. Perhaps we should attempt to measure how much learning in bulk form can be delivered as a function of self-pacing, and discipline content.

The intrinsics of learning within a given media program such as Computer Assisted Instruction (CAI) have been measured, as amply demonstrated in the literature. We must make an educated assumption that if CAI type systems and other AV/TV aids have shown learning increase --that the same occurrence will take place when these different media techniques are brought together in an integrated form. Unfortunately, we do not have statistical evidence of learning measurement through the use of integrated systems. Such information is lacking because we have never had integrated systems in the past.

As Roseman has pointed out, the process of learning is increased with respect to efficiency if learning is approached as a whole instead of in a piecemeal fashion. He supports this concept by relating to learning as an integrated process which is complex and personal. By providing a system which in essence integrates subject matter, knowledge is gained which in the real sense is in itself an integrated function.

Further clarification of integration as a knowledge concept must be considered. To integrate different subject matter by different media is merely a sequential process through the use of automated media. What is needed is a way to assimilate different subject matter so that the knowledge context becomes integrated. At the present time we can only assume that, given the resources to distribute information by media, learning integration will take place. What we need to explore through media related research is the different learning processes that are involved. For example, should subject contents be brought together in a common data bank with associated linking between subject matter. This form of retrieval is known as content analysis, and the research findings are that the field is very complex, and that we have only begun to scratch the surface.

The question of "Why an integrated system?" points to the heart of the problem. Hesitation will not advance the solution. By actual learning and through information system experience we can modify the process, provided some schemes of evaluation are laid out which are coupled with continuing research in the areas of media systems integration. Accordingly, we have to consider at the onset the building in of evaluation schemes and research activities in order to design and develop an eventual viable integrated system.

As expressed by Bob Brennan, representing the Library, integration should take place as a coordination of services, rather than a melding of services which are brought together. This is an operational interpretation, where the answer lies in the way in which integration is procedurized. Extending services, in whatever fashion--melding or cooperating--would be under some organizational control. Brennan also is concerned with costs for mechanization and the problems of sharing an automated system by the different elements within an integrated media service area. Obviously, we must solve the associated support areas with respect to internal operations before we can expect the benefits of an integrated media distribution system. However, the internal problem is readily defined, and should not be a reason to prevent initiation of an automated distribution learning resources system. Quite clearly from comments made representing the Library's concern for who pays for what, and what are the integrated responsibilities such as common holdings, ordering of combined print and nonprint materials, etc., policies have to be formulated.

3. The Augmented Educational Environment

Whatever resource we have available today such as books, articles, cinema, seminars, etc., are deemed as aids to education, and therefore would be augmented materials. Perhaps we should use another definition which allows a contrast to be made of how such media aids, or extends, man's intellect.

The basic idea for the Task Force is to conceive and define an overall educational setting, to include values which by its intended scheme is an architecture for the utilization of technology necessary to allow such an educational scheme to exist. Here we can also consider a modular approach--steps in the achievement of information handling in concert to resource demands.

An augmented educational environment would consist of two parts to make it viable. It would first of all have to provide for the faculty as well as the students those means of delivery systems that can be used inside as well as outside of the classroom. Secondly, it would require the development of suitable software programs to enable the system to be responsive to the informational needs of the various instructional units. These attributes have been spelled out by Dean Pennington, who discusses the arrangements of information presentation with respect to the setting, as well as the types and combinations of media needed. Bob Brennan has taken an uncommitted approach which asks the question, "What are we talking about when we speak of an integrated system?" The question includes how and what types of media are to be integrated, books, film, TV tape, microform, recordings? Further, Brennan is concerned about the kind of service to be extended to the College's cluster units as they are developed, to include local and distant points from the central campus. Clearly, some distinction is needed through a conceptual approach with respect to where students will study, and what effect this has on classrooms.

Roseman thinks we should go beyond phases which define the educational environment as augmented, enriched, etc., when we speak about integrating technology into the educational setting. He is more interested in what is happening than what you call it, and that the system reflect current 20th century attributes rather than 19th century know-how. He concludes from an excerpt from Herbert Marshall McLuhan that speed up is the essential factor regarding education at a local level, and that environment itself has become a teaching machine. Pennington approaches augmentation as two major facets: inside and outside the classroom, and feels that the system is effective only if the points of view of the faculty and students are considered. Scott concludes his remarks about the augmented environment in terms of being aware of priorities whereby we avoid establishing the system from becoming an institution unless it has been given the chance to be evaluated and found suitable.

Each of the opinions given regarding how certain Task Force members view the problem are in themselves general objectives. They are objectives because the concept of an integrated system for media learning resources is based on structuring desirable goals for how such a system can come into being.

B. Specific Objectives

Since the Task Force recommendations include objectives, it is appropriate to include those specific aspects of such objectives as they deal with the various problems brought into focus by the Task Force. Some of these objectives are interrelated, or assume a subset with respect to viewpoints and concern with an integrated media learning resource system. Since these stated objectives are implicit to a large degree, no attempt has been made to categorize them, or to list them in order of priority. Rather, each set of objectives is presented as being within the context of the Task Force with respect to consideration and perhaps importance.

1. That the findings, policies, and recommendations of the Task Force be made part of the College Academic Master Plan.
2. That the Task Force Recommendations and Policy statements be made part of the official record of the Long Range Planning Committee.
3. That the same consideration be taken with respect to the Educational Policies Committee.
4. To look into other programs (State, U.S., Europe) dealing with instructional media and technology; to investigate and provide findings with respect to potential utilization.
5. That the Task Force be concerned with the preparation of recommendations and plans to deal with (a) immediate implications and initiation; (b) near term aspects (intermediate-2-5 years); and (c) long range.
6. Implementation of the recommendations for an integrated system be considered as a model so that the experience gained can serve as standard for other colleges within the state-wide college system.
7. Traditional higher educational methods and schemes be examined and evaluated for the needs of the students and community in the 1980-90's.
8. To examine and evaluate technological gains with respect to their impact on educational and social standards and values.
9. To be concerned with a method of evaluating mediated learning, so that techniques and research can be entered into and the results made available for system improvement.
10. That educational policy and technological utilization be innovative.
11. That the faculty be made an integral part of an integrated resources learning development phase.
12. To consider and recommend that continuing education (extension) be made a part of the distribution system.

13. To consider procedural recommendations with respect to faculty rights which are fair in practice.

14. To prepare recommendations dealing with ways to keep the faculty advised with respect to developmental considerations for media use.

15. That diverse opinions of the Task Force members be considered for media use.

16. To consider ways in which the faculty can make recommendations to improve learning via media systems.

17. To coordinate with the recently proposed Faculty Instructional Research Center.,

18. To examine possibilities of resource learning methods as they apply to the faculty with respect to their use.

19. To be made aware of the potential pitfalls regarding State auditing of mediated learning resources with respect to their unproven duplicity in classrooms in substitution of regular faculty.

20. That consideration be given for fair and appropriate faculty assignment in released time positions for developing software programs for mediated classroom use.

21. To examine a viable way in which faculty can be trained, and the definition of faculty development criteria.

22. That consideration be given to the implications of working together with private business for degree programs via the resources distribution network.

23. That the Library be a central resource holdings and ordering activity.

24. That methods be reviewed for a consolidated budget with respect to services, personnel, and resource holdings.

25. That no distinction be made with respect to resources as to their medium (books, films, cassettes, computer programs, etc.) in terms of faculty/departmental orderings.

26. That consideration be given to order the above as part of a uniform resource budget instead of separate library book ordering, film, etc.

27. To make recommendations for a responsive and viable system, which has inherent growth characteristics built in so as not to make obsolete the technological retrieval and delivery system.

28. That the Task Force clearly define the meanings and purpose of an augmented instructional environment.

29. To coordinate and make available relevant developmental functions in the continuing library automation project.

30. To evaluate common library and media equipment with respect to student use, distribution methods, and automated information retrieval.

31. To investigate and consider opportunities for research grants in support of potential automated resource learning systems and studies.

32. To consider and submit recommendations with respect to continuing the Task Force, if appropriate, together with the stated purpose and responsibilities.

33. To recommend a functional organization for an integrated learning resource system.

Support Paper No. A.(4)

COMMENTS AND OBJECTIVES

by

William White

COMMENTS AND OBJECTIVES

Critics of modern educational institutions rarely fail to charge educators with low level productivity and quality control. The basis of such thinking may well be the easy comparison between the rise of a highly sophisticated and efficient industrial system of the past one hundred fifty years against the relatively static nature of educational systems. In fact, the basic methodology used in today's classrooms has changed little in comparison to the modern industrial system. Efforts to use technology in teaching have too often been looked to as a panacea that would provide instant results. Such thinking is over optimistic and early efforts failed to produce wonders, thus sending teachers back to the classroom to function as usual. During this period (the 1950's) the technology was not at today's level and the educational system was not facing the problems that plague us today.

Recognition of the failure to employ available technology (the fruits of the industrial system) is taking form in the California college system once again, spurred in reaction to public reticence to continue to support larger tax loads. Hence the need to develop more efficient systems that will upgrade both the quality and quantity of the educational function--but not at the reciprocal cost paid in the past--and in so doing, utilize the products of technology. Educational leaders and politicians are in reality seeking new methods that will cut costs and still provide an acceptable product. There is room for caution, however, in order to not make unwarranted promises as to the performance of yet to be designed technologically based systems.

The implied assumption that the use of modern audio-visual and computer devices will reduce cost per student is not fully warranted at this time; however, the general indications do warrant such an assumption. The reservation is prompted by the lack of any system developed to the extent that solid data are available. Numerous schools have demonstrated cost savings in the singular area of television instruction while maintaining student achievement levels comparable with traditional teaching methods.

Holding cost considerations in abeyance, the other major consideration is that of upgrading the quality of the educational experience. Indeed, the value of utilizing various media has been proven of value time and again relative to student comprehension and recall of material while yielding positive attitudes toward the learning experience. These media are usually distributed by traditional methods and used one at a time rather than by immediate retrieval or multimedia combinations.

These two points--greater efficiency in extending the educational opportunity to citizens and upgrading the quality of the educational experience--should be the over-riding general objectives for an integrated instructional media system.

To achieve these objectives a system must be designed that will be unique to the northern California area and deals with the specific nature of Chico State College and related institutions as well as linking existing distribution systems. Such a system (yet to be defined) in meeting the designed objectives should include the following benefits to the educational mission of the college:

1. Compression of time in distribution of educational materials (including faculty) to the college as well as to students in their homes or at designated stations.

2. Compression of time in retrieving educational materials from various sources and storage points.

3. Increase the range of materials available from additional media formats.

4. Provide multi-media materials direct to the teacher in the classroom on various audio or video formats.

5. Extend the geographical reach of the classroom to remotest areas of northern California.

6. Extend classroom offerings to larger numbers of citizens in northern California.

7. Promote interchange of educational material on media formats to any part of the country.

8. Provide new methods for individual access to educational materials.

9. Reduce need for travel to campus from remote areas.

10. Reduce student population on campus.

11. Provide students of instructional media the continuing opportunity to learn the methods of instructional technology.

12. Give rise to experimentation in educational projects utilizing media.

Support Paper No. A.(5)

TASK FORCE OPERATIONS

by

Frank Pennington

TASK FORCE OPERATIONS

The Task Force met weekly, and special meetings were arranged with President Cazier and Dr. Robert Barnard from Evergreen State College. Other people who met with the Task Force were Vice President Donald Gerth, Associate Vice President Ralph Mills, and Executive Assistant to the President Blythe Ahlstrom.

Initially, we hoped to develop a plan of development in the area of instructional media which would show where we are, indicate what might be reasonably expected in the next few years, lead to projections, and suggest alternatives. This proved to be too great a task for a committee to accomplish in the time available. We settled on a relatively small number of general recommendations which require immediate action in order to set the stage for future planning.

There were two limiting factors that emerged which appeared to necessitate prompt action if substantive improvement were to be expected in the future. One was the necessity for coordination of the various aspects of instructional media so that decisions and operations affecting media would be compatible. The second was obtaining faculty support for software development and use. Fortunately, some progress in those matters has already been made, partly as a result of Task Force efforts.

The Task Force was a diverse group with different views on many of the subjects we discussed. Therefore, the recommendations are not as specific or as strong as some members of the group would like, but they should prove to be generally acceptable to many diverse units on the campus. However, when decisions are finally made on some issues, not everyone on the campus will be 100 per cent satisfied.

It was the large diversity within the Task Force that led to the Report format that we have used. Each Support paper represents the author's ideas. Support papers are cited as references to recommendations, but only to provide background. Support papers generally go beyond the recommendations and provide a rich source of ideas for future considerations, but they do not necessarily represent Task Force consensus.

Most members of the Task Force provided two or more papers for the group to study. Although it has been a hard-working, conscientious, committee our Report is only a start. In looking at this vast and exciting aspect of education and in exploring some details in depth, the Task Force has had its hopes for the future raised. Now comes the hard job of trying to realize these hopes.

Support Paper No. B(1)

A PROPOSAL FOR AN INTEGRATED INSTRUCTIONAL RESOURCES AND INFORMATION SYSTEM (IIRIS)

by

George N. Arnovick

A PROPOSAL FOR AN INTEGRATED INSTRUCTIONAL RESOURCES AND INFORMATION SYSTEM (IIRIS)

BACKGROUND

The proper analysis and utilization of modern day technology presents exciting possibilities for educational institutions. Technological methods can be utilized to augment an innovative educational environment to meet the challenge posed by the need to provide quality education for current and future educational requirements. What is needed is to develop and create an educational experiment which is both viable and instructional with respect to educational objectives and student expectations. This sort of system would utilize technology (AV/TV, computers, information retrieval, automated distribution and switching) to serve a common instructional goal. To facilitate the bringing together of modern technology resources, innovative ways to build instructional tools (software) must be examined and designed by the faculty. If the methods and skills of software are lacking, the educational experiment is invalid and becomes a surface operation carried out by hardware.

In order to implement a program which has far reaching effects, such as would be involved if the open university concept is applied, educational programs have to be investigated with respect to transitional values. Viable instruction must take into account student requirements, as well as how the faculty can be trained to provide the type of integrated learning desired in a balanced educational and technological setting. To meet educational change, integral instructional parts and contents must be brought together, so that they provide common function-improved educational resources. These resources must meet the demand and a rationale of a life style in tune with today's students, as well as educational expectations for coming generations.

The Transitional Society and its Effects on Education

The dilemma facing education is that students have to be prepared for an industrial society that is rapidly changing. With these changes one must consider value schemes that are shifting and, in many ways, are undetermined with respect to education. A one-to-one crash program to meet the existing problem, is using a fire fighting technique. This method fails to take into account the domino effect that is likely to be caused from solving one set of problems without some means of futuristic planning. Planning implies a gestalt that is interdisciplinary in nature as is knowledge. This requires a means for collaboration between scholars, between administrators, between the systems of secondary and higher education, and between schools and departments to include the faculty. Planning to just consider cost effectiveness, without taking into consideration learning values and social needs is budget expediency. The former Secretary of Defense, Robert MacNamara, has been critized as "knowing the cost of everything, without knowing the value of anything." This sort of criticism derived by giving special attention to system cost analysis, must be avoided by refusing to adopt educational objectives that bring about change through methods that can be construed as being more "bangs for the buck."

As faculty and managers of our educational resources we face the predicament of serving a transitional society with respect to the meaning of education as well as its relevance. To say we have an answer, and then to proceed to show development by meeting a crisis fails to account for later implications that have not been recognized at the onset. The challenge we face is beyond measurement in our time scale of educational processes. The choice we have is binary--either change or face disaster. An article appearing in the American Statesman sums up the situation as it exists:[1]

> "Our professions, our schools, our fiscal and financial institutions, and all our agencies face a double crisis. The demands upon them are increasing in scale and changing in quality at the same time. Only the overhaul and redesign of the institutions themselves can give a fighting chance to keep pace with the human needs they are trying to meet."

Technological change has forced a mass decline of routine jobs. Mass production has and will continue to create labor problems, as it forces the development of new skills. Human beings are being replaced by machines for routinized functions. To date our educational system has been geared to develop people for an industrial society which can be generalized as "routinized" or mass productive. Since WW II we see the emergence of and rise of what can be labeled as technological industry which is concerned with "non-routinized" problems. These demand a new order commensurate with the needs of an information/communication society. The problems concerned with space exploration, control of environment, air and water pollution, crime, transportation, ocean sciences, and environmental health. These areas call for new skills and value relationships with respect to curriculum relevancy. The demands of our society through technological requirements insist that all levels of intellectual talent build a foundation capable of handling the problems resulting from the second industrial revolution.

To meet the needs of the "non-routinized" industries will require approximately 60% of our work force in terms of productive population in the year 2000. This is a work force equal to the 80 million we have today. According to Whitehead, in the conditions of modern life, the rule is absolute. . .the race that does not value trained intelligence is doomed. . The conditions we face, while difficult, imply a concerted effort in heroic proportions which use the modern methods available today. These methods are systems concepts which can be applied to all levels of the educational scheme. The applications of systems concepts to higher education is still in its infancy. By the same token there has been very little application of cybernetics to educational systems even as an information system. Even though systems concepts are new to higher education, its implications with respect to use are growing. It is in this area that we can emphasize an approach that ties together the loose ends of separate instructional programs. The availability of the explorative system methodologies, and the creation of the tools and principles, and techniques for their partial solution, have provided the main impetus for considering education as an information system.

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[1] David S. Broder, "The Need for Institutional Change," American Statesman, June 12, 1968, p. 4

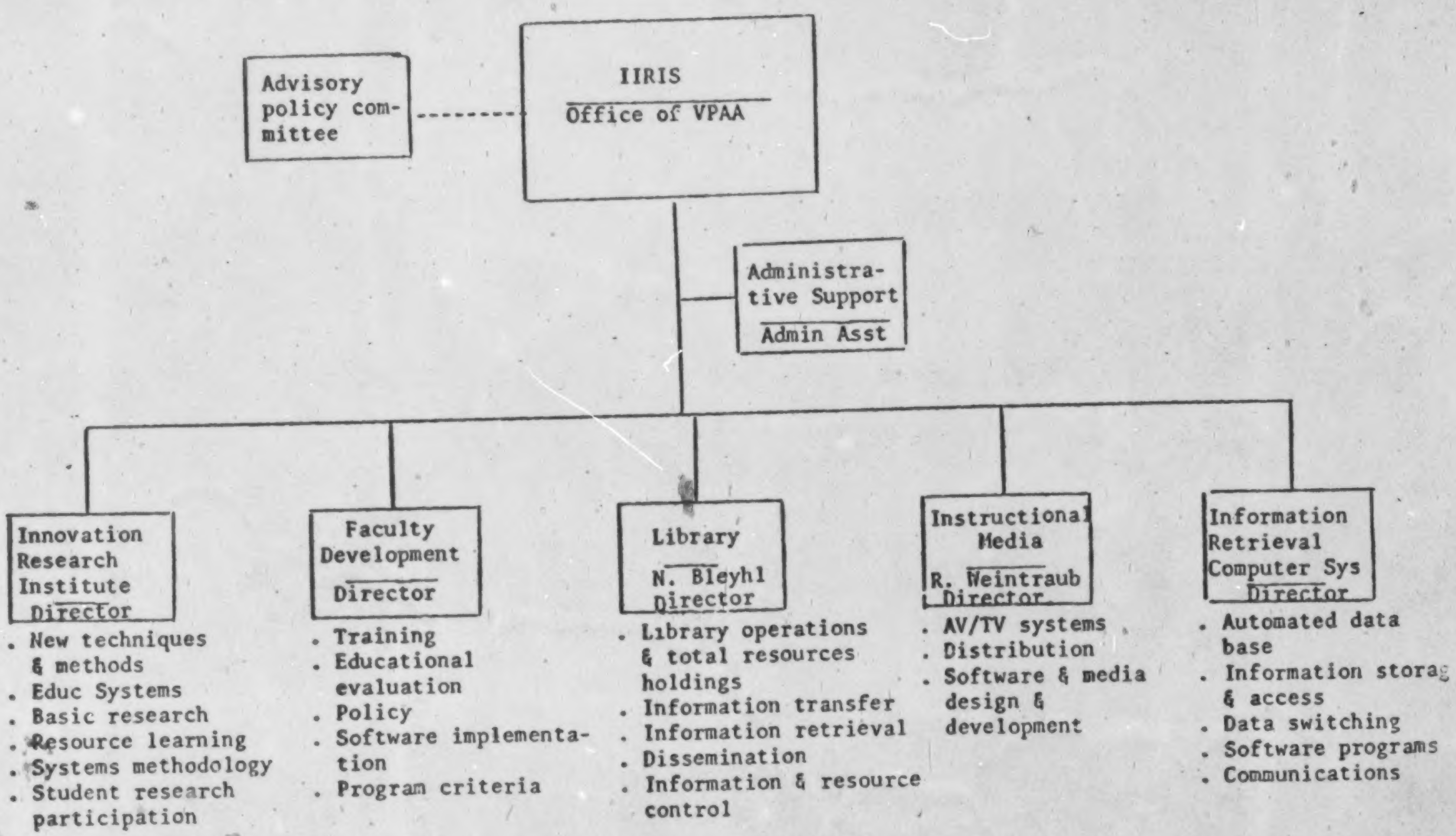
Proposed Educational System and Organization

By exploring the various problems, alternatives and objectives of technological resources as applied to education, exciting possibilities exist within the College for implementation and support of a new and experimental educational setting. What is proposed is an integrated instructional resources and information system, with an appropriate operational organization. In order to create an innovative and new educational setting to take advantage of available modern technology, and faculty development, an organization is necessary. The type of organization suggested is a formal one with a designated administrative head, and an operationally structured organizational unit. The appointing of a responsible individual and operations charter insures that the program will take the initiative and gain momentum in meeting the requirements of educational objectives, budget, support, and future planning. This type of organization is a commitment on the part of the College administration and gives creditability to the integrated learning resources concept.

Figure 1 attached is an organizational schematic which lists the operational units and describes various functional responsibilities.

Figure 1

PROPOSED ORGANIZATION FOR AN INTEGRATED INSTRUCTIONAL RESOURCES AND INFORMATION SYSTEMS (IIRIS)


Advisory policy committee
IIRIS
Office of VPAA
Administrative Support
Admin Asst
Innovation Research Institute
Director
. New techniques & methods
. Educ Systems
. Basic research
. Resource learning
. Systems methodology
. Student research participation
Faculty Development
Director
. Training
. Educational evaluation
. Policy
. Software implementation
. Program criteria
Library
N. Bleyhl
Director
. Library operations & total resources holdings
. Information transfer
. Information retrieval
. Dissemination
. Information & resource control
Instructional Media
R. Weintraub
Director
. AV/TV systems
. Distribution
. Software & media design & development
Information Retrieval Computer Sys
Director
. Automated data base
. Information storag & access
. Data switching
. Software programs
. Communications

Support Paper No. B.(2)

A SYSTEMS APPROACH TO EDUCATION

by

Royd Weintraub

A SYSTEMS APPROACH TO EDUCATION

During the past few years we have heard much about "systems of instruction" and the "systems approach to education." The word "systems" is a difficult one to pin down. People mean different things by it. Some tend to think of it as configurations of equipment or machines. As one begins to expand the view of system, interaction of machines with the people involved becomes an increasingly important part of it. The operations that connect the pieces of equipment become more and more significant as human beings are involved. The important factor here is the extent of the interaction that takes place among the combinations of different parts and human beings. It is not enough to put together a conglomeration of elements and call it a system.

The Need for Instructional Systems

For many years some teachers have been combining different kinds of materials --films, filmstrips, still pictures, models, etc.--to realize their teaching goals. These are instructional systems at the simplest level. The fact that educators have been obliged to develop their own systems of instruction points up the need for a more comprehensive attack on the problem.

Not only do we need to develop packages of interrelated instructional materials, mutually supporting and contributing to a common instructional objective; we need also to analyze the entire educational process in an effort to make it operate at an optimum level.

Most of our instructional materials are produced as separate and distinct communications and have, too frequently, only superficial relevance to the real objectives of education or teaching needs.

Systems of Instructional Materials

We are beginning to move in the direction of systems of teaching materials. A certain phenomenon is occurring in the instructional materials field which we generally call "packaging." Commercial producers are beginning to do systematically what teachers have done informally for years--"package" related materials for specific curricular areas.

True, this package is as yet often not much more than the bringing together of diverse materials--filmstrips, recordings, realia--that have little more to recommend them as a system of materials than that they pertain to the same subject matter. On the other hand, there are some notable attempts to examine this concept more deeply. Open University's approach to teaching throughout Great Britain is an example. Here, great effort has been expended on the production of materials, but only after a thorough study of the needs of a particular subject area. This group has supervised the production of television, radio, super 8mm films, dozens of workbooks, and a laboratory apparatus not currently available. It has caused new manuals to be written and is even now having self-instructional programs prepared and Regional Learning Centers opened. This is all happening around a central concept, and a point of view, as to what the content of a given subject should be.

Although nobody sat down at the outset and proclaimed publicly, "We are planning a system of materials," it is that nevertheless. Possibly the key is the fact that it was planned, that there is a reason for what is being produced. All the materials are being developed out of this planned concept.

Systems of Equipment

Perhaps the recent installation of mediated classrooms is due to the fact that it was set up, not as an isolated device, not as a piece of equipment designed to serve many diverse purposes, but rather as a total configuration of equipment and materials to meet certain aims. This is the fundamental purpose of any system. Another example of such a system is the campus computer--television installation.

This means that such apparatus as record players, recorders, motion picture projectors, color television sets, image magnifiers, and slide projectors can be combined into an integrated system utilizing the unique characteristics of each kind of device to achieve the teaching goal. In usual practice, each of these pieces of equipment is used independently of the others instead of being employed as a part of an integrated system. Now, this type of display often takes the form of a battery of projectors--at the rear of a classroom (normally large group)--projectors all controlled by the teacher with push buttons at the front of the room. The projectors can be started and stopped at will. This is a step toward an instructional equipment system, but only a rudimentary one; and each installation is custom made. This is satisfying the need for the development of control units into which different pieces of existing equipment can be plugged and which are under the direct control of the teacher.

What We Need in Order to Develop Such a System

It is becoming possible now to do things in this college that were not feasible a few years ago. However, we are doing this under the old operating patterns. We need a new approach for the development of an instructional system.

First, we are going to have to have centralized planning.

Second, we shall need to involve people in this planning and execution who are not now working side by side--curriculum specialists and audiovisual specialists.

Third, we need to have access to top scholars and content specialists to work with this group.

Fourth, we will need highly qualified classroom teachers.

This is an unusual kind of team. On the whole, we don't find these kinds of people working together today.

The first thing the people making up this group will have to do is to learn to understand each other's problems and methods. At the present time, for example, the "top scholar" and the "highly qualified classroom teacher" often know nothing about the characteristics of television as a means of communication.

Then, in order to tackle the instructional problem effectively, this group will need to describe in precise terms the specific objectives it proposes to achieve. Next, its members are going to have to break these down into much narrower segments of knowledge than those with which we normally deal.

The human behavior we wish to achieve must be described in considerable detail and accuracy. Now, at the same time that we are building this system, we have to be careful that we are not building it too tightly. We need to be able to supply more resources for students to use than are available in the college library and home today.

Systems Analysis of Educational Problems

The juxtaposition of vitally important problems with the tools and techniques which appear to provide a solution to them has resulted in a great explosion of pedagogical activity in an effort to find the proper tool to match the problem.

Unfortunately, this area is so new that we have no integrated capability for finding solutions. No one man, no one group, simultaneously understands the educational problems, the new technological tools and the techniques for matching them. An alliance of diverse groups is therefore necessary; and there is thus a great need for defining the proper role and responsibility of each of the groups which must contribute to the solution of these problems.

The first area of responsibility is that of the educator. He must specify the educational requirements in terms of student needs and instructional problems. If teaching needs are to be met effectively by an information system, they must be well defined, and some measure of their relative importance must be provided. Only the educator can assess this relative importance.

This brings us to the second area of responsibility, since modern education is becoming increasingly dependent upon some degree of mechanization. The proper matching of the capabilities of technology and the functional specifications for equipment is an essential function of the Media Center.

And finally, we come to the third area of responsibility--that of providing the proper matching of equipment capability to the teaching needs. The development of adequate programs, systems of operation, and equipment configurations becomes a critical problem when large degrees of mechanization are involved. In contrast to educational systems completely dependent on individual teacher judgment, mechanization requires detailed specification of every minute step in the teaching procedure.

Packaging

The packaging of materials and technological equipment in instructional systems will be the primary role of the Media Center. It is worth repeating in this section, however, that equipment packages designed to display several types of instructional materials may need to be emphasized.

The following is a check-list of capabilities which any ultimate teacher-learning systems approach to education might demand of apparatus:

1. The capability of reproducing visual and graphic messages (photographs, drawings, charts, printing, etc.) in high-quality color and definition.

2. The capability of reproducing the same kind of messages where an element of motion is involved (i.e., moving images such as embodied in motion pictures and television).

3. The capability of capturing such black-and-white or color images, whether static or moving, and of reproducing them almost immediately (such as with instantaneous "dry" film processing or by video-tape recording).

4. The capability of capturing such images satisfactorily via both photography and live television, in extremely dim and subdued light.

5. The capability of reproducing and displaying such images by electronic means. Here, for example, a motion picture, possibly of 8mm width, could be amplified and reproduced in color on either a large classroom-wall television screen or on an individual monitor television screen at each student's desk.

6. The capability of transmitting to the student visual material of many kinds, whether 2" x 2" or 3 1/4" x 4" slides; filmstrips; overhead transparencies (up to 8 1/2" x 11"); opaque materials such as flat photographs, drawings, charts, books, documents and small objects; both 16mm and 8mm motion picture films; and possibly video-tape recordings.

7. The capability of linking the classroom master screen (or screens) and those at the individual student's desk with outside transmission sources, such as closed-circuit or commercial telecasts, or the output of libraries of documents.

8. The capability of transmitting sounds of an independent nature, such as from tape recordings, phonograph discs or radio broadcasts.

9. The capability of transmitting high-fidelity, stereophonic sound, synchronized, where desirable, with motion picture and television images.

10. The capability of transmitting, where desirable, numerous spoken messages simultaneously, from teacher to student or students, from student to teacher, as needed in language laboratory work, in group-conference telephone interviews and calls, or in conjunction with other activities in the rest of the college.

11. The capability of making tape recordings of the entire class, of subgroups of students, or of any single student from his own desk.

12. The capability of connecting the assortment of class and individual television-type viewing screens with a central library from which films, book pages or documents can be reproduced upon demand and without delay.

13. The capability of making usable copies of these documents, at trifling cost and without particular fuss or bother, from the face of the individual viewing screen.

14. A central reference library having the capability of marshalling for teacher and/or student all pertinent documents and pictures related to class needs and the teaching-learning systems approach method of programming. Such library material could, of course, be presented according to "model concepts" by dispensing a rich variety of related information, from all points of view, on a chosen topic.

15. Introduction into the system of teaching machine components which would allow the entire class, as well as the individual student, to take advantage of whatever teaching machine techniques prove most effective for the acquisition of information, for formalized study, or for testing.

16. It would be extremely helpful if such a device could absorb composed responses by the student to teaching machine situations. Here it would be desirable to provide for analyzing results by means of non-human evaluation machinery.

17. A modular approach to the design of the system components, so that as much or as little of the system as would be needed in a particular instance could be bought first. Subsequent acquisition of other apparatus items in the total system could thus be achieved with maximum compatibility of components, plus overall economy.

18. Efficient methods for office copying of single letters, documents, book pages, etc.

19. Requisite darkroom and production laboratory facilities to permit the teacher to make locally (or to have made for him) static or moving-image materials of classroom significance, and for the individual student to do likewise.

Support Paper No. B.(3)

CHICO STATE COLLEGE LIBRARY SPRING TASK FORCE REPORT

by

R. G. Brennan

CHICO STATE COLLEGE LIBRARY SPRING TASK FORCE REPORT

I

On December 20, 1971, the Public Works Board gave its approval for the construction of an addition to the library building as approved and funded by the California State Legislature. Along with the library the new facility will house AV-TV and the college's Mass Communications programs. The construction contract has since been awarded, and it is anticipated that work will begin on the project on May 8, 1972.

The present library building was built in 1959 to serve 3,300 FTE students and to house 110,000 volumes. In a very few years the libary plant became outmoded as student enrollment climbed toward the 10,000 mark and collections approached 300,000 volumes.

Recent library emphasis has been placed on developing the collections in some depth to meet the growth of the college, the breadth of the curriculum, and the expansion of the graduate programs. Intensive planning has gone into a series of new library building plans, and mapping strategy in regard to shelving the growing collections without entirely eliminating student seating space in an inadequate physical plant. At this point, library books are shelved in five different locations on campus due to the space shortage in the main building.

Although in recent years thought has been given to library development beyond the traditional book orientation, the library had little opportunity to become innovative in its approach to its educational function or in its approach to in-house operations. The use of slides and TV tapes to aid in student orientation had to be abandoned as the building became too crowded to allow the presentation of slide lectures and it became apparent that the campus was not then equipped to handle television-aided library instruction. The library's phonograph record collection has been neglected due to the lack of funds and the inability of the library to provide sufficient and adequate listening facilities. The library has added much resource material to its collections through the purchase of microforms (microfilm, microcards, microfiche, ultramicrofiche) and it has actively sought after unique materials to film and to microfilm for its collections as funds permitted.

Through the use of microforms, microform reader-printers, the Xerox machines, the Polaroid camera and computer produced catalog cards (available from the Richard Abel Company), the Catalog Department has been able to keep book processing current. At the same time, the department has proceeded with a reclassification project which should eliminate the Dewey Classification scheme (except for the Juvenile Collection which will remain in Dewey) in favor of the Library of Congress Classification System before the end of 1973.

Plastic I-D cards now used in conjunction with Pitney Bowes Addresser Printers have simplified book charging from the user standpoint. The Hollerith coded plastic cards are compatible with computerization of circulation services at a later date. The department anticipates the use of the computer to alleviate the burden of manually recording and discharging large circulations.

"In many respects, library operations have changed little in decades...opportunities exist for effecting significant changes through the use of computers in both the technical and public service areas. The Legislative Analyst, in his analysis of the FY 1968/69 Budget Bill, has this to say regarding library automation:

> 'We recognize the value of applying computer technology to libraries in such areas as book acquisitions, cataloging, circulation control, periodical processing and providing access into information and literature stored in large magnetic storage units and automatically retrieved at random. Considerable progress has been achieved in installation of the above systems at a number of the (University) campuses.
>
> We also recognize the substantial costs that are incurred in designing library systems and encourage the one-time development of these systems where possible tin order to obtain maximum systems design benefit for the funds expended.'

"Studies of State College Library automation opportunities have been made over a period of several years, by various ad hoc committees and informal groups. Reports have emphasized the opportunities of achieving greater efficiency and possible dollar and time savings by applying computer technology to library operation, but to date no report has identified anticipated costs associated with such undertakings and made a recommendation on how such costs should best be budgeted. A detailed financial plan must be developed in cooperation between the Chancellor's Office and the State College Librarians based on an agreed-upon systems design, and receive official approval before real progress can be made in library automation in the State Colleges."[1]

A computerization study project under the supervision and direction of Mr. George Arnovick, Professor of Computer Sciences, was undertaken during the 1971 Spring Semester. Eleven graduate students and one undergraduate student analyzed the operation of the college library as a partial requirement for the course, "Information Retrieval Systems." The group compiled and issued a report[2] in June 1971. Mr. Arnovick's study is continuing in 1971/72 along with a study of the operations of the campus AV-TV services.

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[1] California State Colleges. Office of the Chancellor. Division of Academic Planning. Report on the Development of the California State College Libraries; a Study of Book, Staffing and Budgeting Problems, Nov., 1970 (A Draft Report), p. 92-93.

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[2] Arnovick, George N., Chico State College Library Automation Project: Final Report, June 1971.

Various state-wide committees are functioning at this time to coordinate information-retrieval systems among the nineteen state colleges. Intra-system cooperation is being given emphasis in all aspects of library service within the college system and to a lesser degree among libraries within the Chico State College service area. The office of the Legislative Analyst is taking a hard look at the system's total library program. Such earth-shaking proposals as cooperative acquisitions, centralized processing, the establishment of a system-wide book depository, system-wide I-D cards and union lists of periodicals and microfroms are under discussion or are action items at this time.

Dean Galloway, Stanislaus State College Librarian, Gordon Martin, Librarian of Sacramento State College and Random Wood of the Chancellor's Office, form a Committee on Centralized Processing. Recently they visited the Richard Abel Co. (Portland, Oregon), the Colorado Center, the Ohio Center and the Stanford BALLOTS Center to study the automation of that phase of library activity. By looking at these operations, the group attempted to determine the real costs of automation and to see what could be adapted to our needs. At this point the committee advises that it would be advantageous to establish a center similar to, but not identical to, the Ohio Center. If we go the Ohio route, a stand-along computer will be required for system-wide library processing purposes. The Ohio Center provides for electronic manipulation of bibliographic data, shared cataloging periodicals control, circulation control, inter-library loans communication, a union catalog and acquisitions and accounting systems. July, 1973, is set as the target date for initiating operations of such a system in California. At first it is anticipated that the proposed center will furnish computer-produced catalog cards to the several state college libraries, Later, it will begin to offer the additional services which were outlined above.

II

A new library plant for Chico State College has been in the planning stage for several years. The inadequacy of the present building was recognized as a number one building priority in 1971. Construction has been approved commencing in May, 1972.

Dr. Ralph Ellsworth, Director of Libraries, University of Colorado, Boulder, a nationally known library building consultant, advised Chico State in its library building program. The new library, which will be the largest building on campus and approximately four times the size of the present structure, will be organized along completely different lines than the current library plan. All library divisions will be integrated strictly following the Library of Congress Classification scheme with the exception of Science and Technology which will remain a separate entity in the new organization. A general reference room staffed by generalists and bibliographic specialists will serve the reference needs in areas that were formerly served separately in the Education and Psychology Library, the Humanities Library and the Social Sciences and Business Library. The inter-relationship of knowledge in these areas, in particular, dictates the advisability of combining the collections. The Curriculum and the Juvenile Collections and the Government Publications Collections will, because of their unique classification systems and other considerations remain as separate collections.

A large Reserve Book area will provide flexibility to meet special requirements. A smoking and snack facility will be incorporated into the Reserve Book area.

The building is planned so far as is possible, to be adaptable for the use of the non-book instructional media which is available now and that which will be developed in the future. An attempt is being made, to coordinate functions with those of the Instructional Media Center which will be housed in the same building. Sufficient conduit capability is planned to allow the addition of electronic devices as they become practicable for public use and as budgets permit.

The volume capacity of the new building will be somewhat over 500,000 volumes. The structure which is designed to serve a campus of 12,973 FTE students will seat 3,000 readers. Dr. Ellsworth recommends that approximately seventy-five percent of the reader stations be individual carrels. He further suggests that forty percent of the carrels, or about 900 have electronic capabilities. Although the continued use of existing library furniture and budgetary limitations will preclude such richness in the number of study and electronic carrels, plans are that most seating will be individual and a number of student stations will be equipped for closed circuit TV. audio listening devices and programmed learning. At this point the library will rely upon either the AV-TV services for media preparation or upon commercial sources for records and tapes. Attached is a brief description and cost analysis of the installation of the Ampex PYRAMID system, a highly automatic multi-media retrieval system. (Attachment #1)

Space is included in the Circulation area of the building for data processing. Ideally, the library should have its own small computer for Circulation work and not be tied to the pressures of a campus computer center.

> "It is convenient to consider four different areas of computer usage in the library;
>
> Library housekeeping operations, including ordering and receiving of momographs and serials. The circulation control of library items, and the preparation of catalogs and listings of many kinds;
> Cataloging and allied content analysis operations designed to assign to each item subject identifiers as well as call number or related classification information;
> Storage and retrieval operations which make it possible for the user population to obtain access to the desired information items in response to appropriate requests.
> Circulation control operations designed to insure an orderly collection development through additions and deletions of materials and file changes when necessary"[3]

At this time it is difficult to determine how much of the above will be accomplished through a local operation or how much will be tied in with a

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[3] Salton, Gerard. "Computers and Libraries - a Reply..." Library Journal, Oct. 15, 1971, p. 32-77

"California Center" similar to the Ohio Center. A computer to handle library circulation services is expected by February, 1973.

Automation plans should become firm prior to the opening of the additional library facilities. A library data base needs to be collected soon in order to enjoy the convenience benefits of computerization. Cost factors will be high to accomplish the preliminary work required for automation so budgetary factors must be considered and met to do the job. Hollerith coded I-D cards are in use now, library books are pocketed to handle IBM cards, or similar charge cards. Reclassification from Dewey to the Library of Congress Classification scheme is progressing rapidly. The library situation is being coordinated with that of the Audio Visual Services.

Better techniques of promoting an understanding of library services are under study within the library. An experimental course "Business Library Sources" is being offered in the School of Business, during the 1971-72 academic year, by a member of the library staff. Self instruction devices are under study to aid in promoting better library techniques. Two major bibliographies and several leaflets were prepared and published by library staff members in 1972.

III

New thinking about the configuration of higher education will have an effect upon the form and type of services the library will offer and upon the services offered by other units supportive of the teaching-learning role of the college. Cluster schools on campuses removed from the existing campus and the external degree programs will make demands upon the library's materials collections as well as upon its services for which budgetary support has yet to be developed.

The library is currently involved in the development of techniques and methods to increase cooperation and coordination both on and off campus. The library is deeply committed to library cooperation within the local service area through its participation in the North State Cooperation Library System. The NSCLS serves an area of 32,000 square miles and 400,000 people. Five Community Colleges (Butte College, Shasta College, Feather River College, College of the Siskiyou, College of the Redwoods) and two state colleges (Chico State College, Humboldt State College) are located in the territory in which the Cooperative operates. Through the inter-library loan arrangement and delivery system organized by the NSCLS, Chico State College Library Collections are readily accessible to all patrons of the public, academic, and special libraries participating in the system including those students enrolled in Chico State College's extended degree programs. This project which is funded through a Library Services and Construction Act Title III grant is an initial step toward providing better quality library service in Northern California. The fact that, of the three community colleges through which Chico is offering external degrees in 1972 (Yuba College, Lassen College, and Shasta College), only Shasta College is served by the NSCLS is a matter of concern. Faster delivery of information and inter-library loan requests than is possible through conventional methods (U.S.Mail) is essential. Electronic distribution systems will aid in alleviating this problem, if funding for them can be obtained.

The College Librarians and the Chancellor's staff are working toward systemwide coordination to facilitate the sharing of resources, to promote greater efficiency, and to realize economic benefits.

for further information concerning library development in the context of statewide system planning, please read the attached document, Development of the Libraries of the California State University and Colleges 1972-1982 issued by the Office of the Chancellor, the California State Colleges, March 1972. (Attachment #2)

ATTACHMENT No. 1

AMPEX CORPORATION
Audio/Video Communications Group

NO.

Budgetary

PROPOSAL 10 April 1972

CALIFORNIA STATE COLLEGE
AT CHICO

The PYRAMID system is based upon automated high-speed duplication of audio and visual materials through application of digital process control techniques.

The PYRAMID system is termed a "buffered" system since each study terminal includes an audio and/or video "buffer" between the terminal and a bank of master audio and visual materials. The master copies are available for high-speed duplication onto any "buffer." In such a system every study terminal may enter a simultaneous request for the same program or simultaneous requests for different programs in the master bank, Requests may also be made at random times with program selections requested at random. All such requests will be rapidly serviced through automatic high-speed duplication to make buffered copies for each individual. When the duplication process is completed, the copy is under the individual's control to stop, start, rewind, or skip ahead. Pictures may be reviewed while the audio is stopped whenever desired.

The PYRAMID system is designed with component modules which may be assembled in a wide variety of system configurations and functions.

Functional sub-systems include Random Access Audio - with or without high-speed cassette duplication from the master bank; Random Access to video still frames or pictures, with or without the audio components; and Lecture Response Systems - with or without the audio/video portion of the system. The audio system may also include touch-tone telephone access and control. All systems include a master loading center for loading materials into the system. Because the system is modular, any system may be expanded to include additional functions or component modules without a cost penalty.

AMPEX CORPORATION
Audio/Video Communications Group

NO.

PROPOSAL

Budgetary
10 April 1972

CALIFORNIA STATE COLLEGE AT CHICO

BUDGETARY PRICING

SYSTEMS

Basic System	192 Audio Program Storage	$338,205
Option 1 System	144 Audio Program Storage	$320,387
Option 2 System	96 Audio Program Storage	$299,041
Option 3 System	44 Audio Program Storage	$281,223

ADD-ON OPTIONS FOR ABOVE SYSTEMS

Option 4 System	1 CD-100 High-Speed Cassette Duplicator	$ 7,750
Option 5 System	Interactive Branching Capability	$ 66,300

ATTACHMENT NO. 2

DEVELOPMENT OF THE LIBRARIES OF THE CALIFORNIA STATE UNIVERSITY AND COLLEGES, 1972-1982

The authority and impetus for the development of State College libraries derive from provisions of Title 5 and resolutions adopted by the Board of Trustees since 1961. Several library development programs have been approved by the Board, each of which was designed to solve specific, immediate problems facing the libraries related primarily to the size of book collections and library staffing. Long-range goals were more briefly treated in the reports approved by the Board, with an identification of particular library operations which needed in-depth study and improvement.

The present document is a general plan for the development of the State College libraries during the period 1972-1982 and constitutes a statement of policy to be followed by the Chancellor's staff and the State Colleges.

The enormous increase in the number of students seeking higher education in the California State University and Colleges has resulted in such great demands being made on the State College libraries that they constitute, outside the classroom and laboratory, a major portion of the budgeted resources for learning. Proliferation of publications, reflecting fragmentation of knowledge, and the increase in interdisciplinary fields, add to the severe burdens placed on libraries.

1. Library Objectives

The primary objective of an institutional library is to support, in a cost beneficial manner, the academic programs of the State Colleges, and to participate actively with students and faculty in their intellectual and cultural activities. Each college must, therefore, develop its library in a manner which will be most responsive to the institution's range of academic needs but, a) to prevent within guidelines and controls unnecessary duplication of holdings, b) to effect greater sharing of resources, and c) to increase the efficiency of library operations susceptible to systemwide coordination.

2. Library Collections

The current knowledge explosion is expected to continue to accelerate during the next decade. This makes it impossible to provide all the materials and services needed to support high enrollments and every curricular program. State College libraries, however, must acquire and maintain, insofar as fiscally feasible, book, periodical, document, map, record, slide, microfilm, and other collections to satisfy all but the most complex and specialized needs of their users.

Improved methods and techniques to increase intercampus cooperation and coordination must be devised to adapt the operation of State College libraries to the larger enrollments and new curricular programs projected during the next 10 years.

3. Library Trends

The following summary of trends is based on page 80, Academic Master Planning in the California State Colleges, 1971-72 through 1975-76 (April 1971). Current trends indicate that academic libraries of the future will continue to assume increased importance. Collections will necessarily expand with appropriate services to support every learning activity on the campus. However, the concept of the library primarily as a book-oriented institution will continue to change as language laboratories, audiovisual services, computer-assisted instruction, provision for reproduction of documents and related activities are centered in the facility, with the result of the achievement of the broader concept of the library as communications-oriented, that is, as a comprehensive instructional resources center.

During the next decade, then, library services will undergo significant changes, space needs will be altered, activities will become more diverse and specialization will become more evident. Changes in methods of instruction as well as in curricula will cause a marked increase in independent study and in tutorial programs. In brief, it must be anticipated that faculty, students and members of the community will make more extensive use of study areas, library materials and reference services.

To permit State College libraries as they exist in 1972 to keep pace with increasing literature, publications and service requirements, they must accelerate and expand programs for library improvement already undertaken. (Budgetary constraints in the past several years have not permitted State Colleges to keep pace, in the context of the preceding statements.) To permit the State College libraries to do more than just keep pace and to fulfill development goals adopted by the Board of Trustees, a more extensive, coordinated and integrated approach must be followed.

4. Library Cooperation

Accelerated cooperation among libraries is essential not only within the State College System but also among academic libraries in both public and private institutions of higher education. Automation, in particular, can usefully be applied to many diverse library functions as has already been demonstrated in academic and public libraries. Library automation, designed on a controlled, coordinated systemwide basis, will do more to accelerate meaningful cooperative activities among State College libraries than any other feasible activity.

Therefore, as rapidly as possible, the Office of the Chancellor will take a leading role, in cooperation with the colleges, in defining library automation requirements and in developing an appropriate library automation capability.

Furthermore, operations and development of State College libraries will be coordinated, whenever appropriate and feasible, with other public and private institutions and systems of higher education, in support of the mandated functions of the California State University and Colleges.

5. New Library Development Program

A new library development program approved by the Board of Trustees at its January 1971 meeting will become fully operational in 1972/73. It is designed not only to solve deficiencies of prior programs but also to budget essential resources to permit development and operation of library services required in the next decade. The new program, detailed in The Report on the Development of the California State College Libraries, comprises a master plan for the development of State College libraries with respect to the development of book collection sizes, library staffing and library operating costs.

The important features of the program are:

A. Program-Oriented Book Acquisition Goals

Book acquisition goals are based on U.S. Office of Education standards for library collections and provide the following for each State College library:

1) A basic allowance of 75,000 volumes of books and serials;

2) fifty additional volumes for each FTE student after the first 600;

3) three thousand additional volumes for each subject field category of graduate study; and

4) five thousand volumes for each approved joint doctoral program.

Whenever a college is within 25 miles of another public institution of higher education which already possesses a large modern academic library, book collection goals are to be subject to a 5% reduction when that college possesses more than 325,000 countable volumes. The collection goals are planned to be attained over a period of 15 years beginning in 1972-73. After a college attains its goals, it would then be budgeted only to receive sufficient volumes to maintain the collection.

B. Revised Workload-Oriented Staffing Formulas.

1) A managerial/administrative staff allowance of two to ten positions, based on the total size of the library staff to be managed.

2) A basic public services staffing allowance of from three to ten positions, varying according to the total number of students and faculty.

3) An additional position allowance for public services staffing:

   a) based on the number of public service stations to be manned. This allowance is to be adjusted for the hours the library must remain open, and the change in workload resulting from increased (or decreased) library collection usage;

b) based on the number of undergraduate and graduate students and faculty served.

4) A technical services staff allowance of one position for each 950 volumes budgeted from State funds.

C. Minimum Staffing Allowances for Libraries at New Colleges.

1) A managerial/administrative staff of two positions.

2) A basic allowance of three positions.

3) A public services allowance of two positions.

4) A technical services allowance of two positions when cataloging is provided by private contractors, otherwise one position for each 950 volumes to be acquired.

D. Non-Formula Budgeting for Library Operating Expenses.

Costs of supplies and services are to be budgeted based on individual college justifications.

E. Budgetary Provision for Library Automation.

In 1972/73, 1.0% of the total library budget will be designated for library automation purposes. As progress in automation is made, the percentage gradually will rise to 6.0% by 1981. The following are examples of activities underway or planned to enable State College libraries to keep pace with present demands:

F. Increased Use of Facsimile, Closed Circuit Television, Long-Distance Xerography and Teletype, in Addition to Improvement in Interlibrary Loan Procedures Described Above.

Speedier transmission of information and interlibrary loan requests than is possible by the use of the mail system (the cheapest mode) has long been a goal of State College librarians. Plans are to install, in FY 1972/73, facsimile devices between four college libraries for a one-year test. The objective is to determine whether improved benefits to library users and staff outweigh or at least equal the added costs.

G. Coordinated Development by Campus of Holdings and Specialized Fields of Knowledge.

Success in this project rests on the ability to evaluate the quality of current library collections; work has begun on this difficult and very time-consuming task.

H. Cooperative Acquisition of Selected Books and Serials, Particularly Expensive and Highly Specialized Materials.

State College librarians recently initiated a cooperative acquisition project of selected British Parliamentary Papers Area Studies sets, with controls to preclude unnecessary duplicative purchases. This is the first known instance of this type of cooperation among academic librarians in a system as large as the California State University and Colleges.

I. Centralized Storage of Little Used Material When Cost Benefit Analysis Indicates That Savings Would Result Therefrom.

Establishment of a central book depository or cheaper on-campus storage for infrequently used books may represent a way to provide additional library space for the more active portions of the collections and to reduce total book storage costs. Automation in State College libraries and the availability of economical, mechanical retrieval systems are prerequisites before cost effective depositories can be established.

J. Fuller Development and Systemwide Use of Multimedia Learning Aids.

K. More Extensive Use of Microfilms.

A descriptive inventory of current usages of microfilm in the Chancellor's Office and on the campuses is being compiled as a basis for considering possible future uses of microfilm in the management of written information.

L. Joint Purchase of Significant Privately-Owned Book Collections.

An opportunity to acquire a privately-owned book collection at a cost advantage to the libraries arises about once every 18 to 24 months. One small collection recently was acquired, but two large collections were not bought because the quality of the holdings was not appropriate to the needs of the State College libraries.

M. Increased Hours of Operation and Library User Access to Public Areas.

The new library development program, which will become operational in FY 1972/73, provides additional public service staff positions. The Governor's 1972/73 Budget includes an increase from the 1971/72 number of public service positions and some improvement in hours of operations and library user access is anticipated starting July 1972.

6. Library Development Priorities

The following are examples of planned activities which are essential if State College libraries are to continue their development and to meet Board of Trustee approved goals.

N. Coordinated Book and Microfilm Acquisitions and Cataloging.

O. Computer Tie-Ins Between State Colleges and the University or Private Institution Campuses and Public Library Networks Under Consortia Arrangements.

These arrangements will greatly enlarge the bibliographic information files available to library users and will be in addition to State College specialized union catalogs.

P. Library Automation.

It is planned to adapt and utilize software, operating systems and other developmental work already undertaken by other states in their application of cost beneficial library automation. Initial State College efforts will be focused on book processing and automated book buying, followed by a shared cataloging system, a serials control system, a technical processing system, a remote catalog access system, a circulation control system, and a bibliographic information retrieval system. This effort requires, at the Chancellor's Office level, coordination, and reorientation of individually established library goals, habits and operating procedures.

Q. Development of Cooperative Microfilm Projects with the goals of improving library management and preserving scarce resources by reducing them to microfilm for systemwide distribution.

Support Paper No. B.(4)

PROPOSAL FOR FACULTY INSTRUCTIONAL RESEARCH CENTER

by

David Downes

Proposal for Faculty Instructional Research Center

Introduction

During the current academic year, Chico State College has gone through a careful assessment of its prospects for the future. Various task forces and committees have and are completing significant revaluations of the nature of the growth of the College throughout this decade. These assessments have already revealed the need for new directions in several areas of the College: The need to develop and implement academic programs which are to provide competence for its graduates to meet the occupational and societal demands placed on them in the future; to encourage academic programs that are organized around relevant themes or that lead to the intergration of knowledge, skills, and attitudes beneficial to the individual graduate and/or to the society in which he will function; to develop and maintain an educational and cultural environment in the College which has a sense of community, a rich academic and extracurricular quality, opportunities for faculty to improve their instruction and students their learning and good, open and mutaully beneficial relations between the campus and the surrounding community. To achieve these goals, regular reviews of academic programs, new and old, will have to be instituted in order to make sure that they are functioning so as to fulfill the new goals of the College at viable levels making the best uses of resources for instructional purposes.

Central to these changes is the process of faculty development in the College. There will be an increased and demanding need to encourage faculty to broaden their academic commitments, to enter into self-development programs in which new competencies are acquired, to examine departmental curricula in the light of these new directions in the College, to help establish new criteria for hiring, retention, and promotion in the context of a more comprehensive concept of teaching service areas in the College and in general to begin to develop a new and expanded role for the faculty. More specifically, new efforts are needed to assist faculty develop their professional capacities in more than one academic specialty, to assist faculty make more and better use of instructional media, to assist young faculty develop their teaching potentials more effectively, to help senior faculty enter into periods of self-renewal, to attempt to recruit and hire more faculty from the nation's minorities as well as provide opportunities for them to become fully qualified in their positions, and to set up administrative internship opportunities so that younger faculty begin to understand the nature and role of the academic administration and to develop capacities for serving in the academic administration.

The leading developmental idea which threads through each of these faculty growth areas is the capacity of the faculty to reach full professional maturation while retaining a flexibility for serving more than one academic need of the College. This means that the College must find ways to attain excellence in the learning process while at the same time making full use of a range of abilities of the faculty in order that the institution remains functionally viable in a period in which growth in sheer numbers will dimish to zero and quality education will have to be maintained within a nearly static resource budget.

There are many ways in higher education to attempt to achieve the goal of professional fulfillment for the faculty, educational fulfillment for the student under the altered circumstances in the decade of the seventies. Among them is the Faculty Instructional Research Center. What is needed is a formal structure to improve the learning and teaching process here at the College. There is no resource center on the campus for studying some of the newest theories of learning which have emerged in recent years; there is little opportunity for young faculty to be assisted in developing their teaching effectiveness; there is no special place for senior experienced faculty to experiment with the learning process, to bring their teaching capabilities up to date.

Proposal

To support and nourish improvement and innovation in teaching, a Faculty Instructional Research Center is proposed. It is recommended that the Center be separate from the Learning Resources Center now being studied by a special task force. While the two centers would necessarily have heavy functional coordination, their functions would remain distinct.

The Faculty Instructional Research Center would have the following primary functions:

1. Assisting faculty members to meet their needs in helping them become more effective teachers;
2. Provide consultation services for the improvement of instruction to the entire College;
3. Make readily available a teaching resource library of instructional experimentation in higher education;
4. Encourage and consult interested faculty members in carrying out teaching research funded both by the Center and by other agencies.

Services

The Faculty Instructional Research Center would provide the following three basic services to carry out the functions stated above:

A. Direct instruction in teaching techniques including new media delivery systems by on and off-campus experts;

B. Consultation services involving instructor evaluation, teaching techniques and the development of proposals to improve teaching;

C. The management of funds and research resources for research and development in the improvement of teaching.

Activities

While the Center's activities can now be only surmised, this proposal would envision undertaking some of the following:

Faculty Orientation: The Center would mount short-term orientation programs for new faculty in cooperation with schools and departments.

Administrative Internships: The Center would have available resources for appointing a limited number of young faculty to work with major academic officers in order to provide experience and understanding of the nature of academic administration. The aim of the activity is to provide the College with a group of faculty trained in administrative practices and processes.

Instructor Evaluation: The center would provide consultation to departments and schools in developing faculty evaluation questionnaires, their interpretation and value. This could include some "trouble shooting" on faculty who have some important dissatisfaction with their teaching effectiveness.

Seminars and Institutes: The Center would mount short-term courses offering instruction by campus experts as well as off-campus specialists in the latest teaching techniques. These would include seminars and workshops on significant topics in the area of instructional theory and practice.

Teaching Resources: The Center would develop a bibliography on learning theory, teaching materials and experiments. The information would be made available to all faculty.

Faculty Newsletter on Teaching: The Center would edit a newsletter which would serve as a clearinghouse for the exchange of information about new programs. Some issues could be topic-oriented such as self-grading or student motivation. If sufficient funds were available, abstracts of important instructional research could be published.

Teaching Fellowships: Hopefully the Center would have available a number of instructional positions as well as a research budget. This being so, the Center would accept instructional research proposals from the faculty and after reviewing them, would allocate support funds to carry those out which were deemed significant efforts to develop more effective teaching roles. These mini-grants would be competitive, could be carried out during any time during the regular academic year, or equivalent time during the summer. Guidelines for a proposal development program would be drawn up by the Center staff.

Consultation on New Programs: The Center could provide consultation on new academic programs in the College. This could involve developing proposals for new courses, programs, and degrees, as well as in some instances running experimental trials before formal approval and implementation in the College.

Student Demographic Data: The Center would work closely with the Director of Instructional Research in order to obtain baseline information about students so that the faculty can be provided with the best student profiles and academic prediction data.

Media Instruction: In the next three years, faculty at Chico State will be presented with unprecedented opportunities to use a wide range of educational media, frequently in new learning formats. In the near future the campus will have excellent computer capabilities, with six terminals located conveniently throughout the campus connected to San Fernando Valley and San Francisco's large computers. Dial access to audio materials soon will be a reality. The Library is expanding its micro-library resources. By the fall of 1972, there will be seventeen classrooms equipped with TV monitors, slide and movie projectors, and recorders, controlled from a console in the front of the room. In 1973 the new Library building will have about 3000 carrels with many of these equipped to handle automated learning packages. Also, by 1973, distribution systems of all types of slides, film TV tapes, etc.

As part of the professional development of all faculty, it is their obligation to know these opportunities, to develop their skills so that they are able to use new techniques, and to address themselves to the problem of selecting and developing software that will make a more effective and lasting impact on the students. Many faculty are now very skillful and well acquainted with some of the new educational media, e.g., one faculty member may have had experience with film loops, another with integrating the advantages of a computer into the learning process. But there are few faculty who are equally at home in all areas, and while one cannot be an expert in everything, a certain minimum expertise is desirable for all faculty. Furthermore, just as faculty have been creative in writing textbooks, revising notes, constructing examinations, they should be able to apply their talents in devising better ways of presenting concepts and motivvating students through the use of audiovisuals.

Faculty development is the key to the successful application of these new media to the learning enterprise. They are best able to determine whether or not a particular slide set-audio cassette-learning package is superior to a more conventional instructional approach. In a sense, faculty expertise in the new media is the limiting factor for its successful application, and therefore, rapid and effective improvement of the faculty skills college-wide should be an objective of the highest priority. One way of accomplishing this objective is to provide a Faculty Resource Center which would have personnel who know the various media and can instruct others in their use.

Basic Research in Learning and Instruction: If the Center is sufficiently funded and acquires good academic leadership, it could undertake some basic research and development efforts in learning and teaching. Some areas that might be studied are parental attitudes toward college programs, cost effectiveness of cluster grouping of students, changes in instructor behavior and attitudes in innovative programs and computer assisted instruction.

Center Evaluation

Essential to the proposal is an assessment of the Center's activities. Towards the end of the second year, an evaluation would be made under the direction of the Center staff involving a documentation of Center activities and their impact on the College and a visitation by an off-campus assessment team including interviews with faculty and students relating their assessment of the Center's effectiveness in carrying out its purposes.

Possible Long-Range Goals of the Faculty Resources Center

If the Center proved to be a vital and contributing agency to improving the quality of teaching at the College, its activities ought to be extended to larger goals. One of these might be the re-structuring of general education into a cohesive educational pattern. Another might be directed towards finding instructional environments wherein discrete disciplines are integrated in such a way that what a student learns relates to what he is. "Knowing" and "becoming" are unfortunately divided in contemporary higher education with disastrous consequences--knowledge directed to no fulfilling personal purpose. All the variables of human growth and development must be taken into account in future academic programs in our college and universities.

Facilities

Given the present transitional status of campus facilities, the Faculty Instructional Research Center would have to be situated in temporary quarters. To begin what is needed would be an office area including three rooms, one for the Director, one for a secretary and ideally a larger room for conferences (or at least access to a conference room). Another need would be a place where displays of audio-visual materials and other learning materials might be used. Obviously if this entire facility were one complex and centrally located on the campus, the FIRC would have greater visibility and maybe better impact on the College.

Looking to future permanent facilities, the FIRC should be located in the new library where it should become the instructional nerve center of the learning resources in the College. Since new library plans are presently being drawn up, the location of the FIRC should be immediately taken into account.

Staffing and Budget

The College has yet to determine the organization of the proposed Center. Since the greatest possible involvment between faculty and the Center is desired, the functioning of the Center would be worked out so as to coordinate fully with the policies and practices of the academic departments consistent with the aims and goals of the Center. This could involve in certain areas the matching of staff and resources to accomplish certain mutually beneficial endeavors. The College has set aside six instructional positions to support faculty development and is working out procedures aimed at making the best and fullest use of these to develop and increase teaching effectiveness.

Additionally, the College proposes a preliminary budget of $70,000 to establish the Center, initiate its basic activities and begin collaborations with faculty and departments on faculty development projects. This budget would provide for Center leadership, staff support, operating expenses and special funds for conducting seminars and short-courses as well as consultations to improve teaching including increased use of newly acquired media on the campus.

Support Paper No. B.(5)

PROPOSAL FOR POSSIBLE TASK FORCE RECOMMENDATIONS

by

David Downes

PROPOSAL FOR POSSIBLE TASK FORCE RECOMMENDATIONS

All the learning materials on the campus should be the responsibility of one central agency on the campus in order that a unified basic resource tool be available to the faculty and students of this college. Presently these tools are available as separate components, each acting on an individual basis and reporting to different college offices. While it is not the intention to alter the basic agency functions of these now separate college resource activities, it is the intention to bring them together into one organization under one directorship for the purposes of creating an integrated total system for supporting and developing the learning-teaching environment of the College.

In order to implement this recommendation, an Office of Instructional Resources and Information Systems Development Center should be established, together with an advisory committee. This would constitute at first a basic planning and development unit which would carry out efforts to achieve the following:

1. Plan and coordinate with appropriate groups within the college for inputs into the plans for the new library so that proper facilities and equipment are eventually achieved for the full facilities integration of all the learning resources on the campus.

2. Plan and coordinate with appropriate groups those necessary preliminary actions necessary to bring the following resources, agencies, and activities into a unified functioning organization:

   A. Library, whose prime activity would be to procure, store, and disseminate all learning materials on the campus;

   B. Instructional Media, whose prime activity would be to provide all AV-TV services, software, development, media design and delivery.

3. In order to have a full learning system integrated and adequately functioning when the basic facility is completed (new library building), the Instructional Resources Office, together with the advisory committee, should also begin to plan and coordinate the following new functions:

   A. A faculty development office whose prime activity would be improving the instructional skills of the faculty;

   B. An instructional computer systems office whose prime activity would be to plan, coordinate, and develop a computer system for full automation of all learning resources and capacities for computer-assisted instruction on the campus;

   C. An instructional research office whose primary activity would be to foster research into new teaching techniques, educational systems and learning theory including experimentation;

   D. An office of student resources whose primary activity would be to work with the various aspects of student culture, assist with student generated programs and encourage student efforts to contribute the academic life of the College.

Support Page No. C.(1)

PROCEDURE STATEMENT FOR THE INSTRUCTIONAL MEDIA CENTER

by

Royd Weintraub

PROCEDURE STATEMENT FOR THE INSTRUCTIONAL MEDIA CENTER

The Instructional Media Center evolved as a result of the combination of the Audio-Visual and Television Services Center. This union has provided new services and a need to clarify those procedures utilized by the Center. The document which follows provides for equitable service to the various members of the Chico State College community.

SERVICES TO THE FACULTY

EQUIPMENT AND MATERIALS:

The Instructional Media Center maintains a permanent collection of films, filmstrips and tapes for use in the college instructional program. Major types of media equipment may be borrowed by the faculty for use in instruction. Equipment and/or materials will be delivered to the classroom only if the requests for this service reach the Instructional Media Center by 4:30 p.m. two school days prior to request date. Immediate pick-up of materials or equipment is possible subject to availability or prior reservations. Loaned materials and equipment are to be used only during the hours of scheduled use; extended use of equipment may be arranged subject to its availability. Forms for requesting these services are located in the department offices or the Media Center (see sample attached).

FILM RENTAL SERVICES:

The Instructional Media Center will obtain motion pictures by rental or loan for instructional purposes. Rental costs will be borne by the individual department's budget. All ordering, correspondence and shipping will be handled by the Center. Departments or individuals who order their own films will be responsible for the return of these films. Consultation on locating appropriate films will be given by the Media Center staff. An extensive collection of catalogs is available to facilitate our ordering films. Requests to rent or borrow off-campus films should be placed at least three weeks in advance of the showing date. This time is needed to check with rental agencies on film availability, and to allow time for shipment to the Center. Forms are available in all department offices for off-campus film ordering. (Sample attached)

PREVIEW SERVICE:

The Instructional Media Center will order for preview any available media materials of interest to instructors. Many new materials are received for preview without specific requests from instructors; when these are received, the Center notifies faculty members about items related to their fields of interest. Evaluation forms are provided with all preview films for faculty completion. The evaluations are one criterion when deciding on what films to purchase for the instructional program. Preview facilities are located at the Center.

PURCHASE OF MATERIALS:

Films, filmstrips, and certain other instructional materials are purchased for the permanent collection upon recommendation of the faculty. Another criterion for purchase is the frequency films are required for instruction, this determines whether purchase is more economical than renting or borrowing.

INFORMATION SERVICE:

Catalogs of films and filmstrips held in the Instructional Media Center are maintained in the reception area. These catalogs are also provided for faculty members upon request. Reference materials on other instructional media from non-college sources are available in the Center, and the Center personnel are available to assist faculty members on problems of selection and use of media instructional materials.

SERVICES TO INDIVIDUAL STUDENTS (Faculty responsibility of those services)

Students use of materials and equipment is limited to functions directly related to the college program of instruction and course-connected activities for which credit is given. State policy does not permit us to loan materials or equipment to religious, fraternal, or other non-college organizations, nor may they be used solely for entertainment. Faculty must sign loan tags and assume responsibility for both type of use and care of items borrowed.

MATERIALS LOAN:

Both full-time and part-time on-campus students may use films, filmstrips, and other Center materials in their classes. Requests for this service should be placed by the faculty member teaching the class. Student teachers assigned to schools may check out materials for use in student teaching provided that the material is part of the students teaching plan. Forms for this service are located in the Student Teaching office in the Education building.

EQUIPMENT LOANS:

Individual students may borrow equipment for classroom use such as tape recorders, video tape recorders, motion picture projectors, slide projectors and record players for college course-connected activities by presenting a faculty signed order form. Only in the rarest of circumstances should the faculty member approve extended or off-campus use of equipment by students. Student teachers should plan to use equipment available in the school system where they are student teaching. Space is available in the Center where course-related projects may be prepared for presentation. Faculty members should not permit students checking out equipment solely for previewing materials. Preview rooms are available at the Center from 8:00 a.m. to 10:00 p.m. Monday through Thursday and from 8:00 a.m. to 5:00 p.m. on Friday.

SERVICES TO ORGANIZATIONS

The Instructional Media Center has a designated amount of equipment assigned for use by groups which are officially recognized by the Associated Students. This equipment is housed and checked out at the Center. All such equipment must be requested through the Activities Office (B.M.U. Information Desk) and the reservation form must bear the signature of the current faculty advisor. A rental fee (rate card available) will be charged for all equipment used at any event where admission is charged, and such fee must be deposited in advance at the Foundation Office. If equipment is lost or damaged, the person signing the loan tag will be held responsible. When there is no admission charged for the event, a " basic set-up" (one piece of equipment plus needed accessories, i.e., cart, screen, stand, etc.), will be available at no rental fee. Requests requiring more than a basic set-up will result in a rental charge for all additional equipment at the current rates. In all cases, if operator services are required, the using group will pay costs (estimate provided in advance) for operator and equipment. Students are expected to obtain their own films and materials through outside-of-the-college sources, although the Instructional Media Center may be used in a consultative capacity.

SERVICES TO OUTSIDE ORGANIZATIONS USING COLLEGE FACILITIES:

College and auxiliary organizations sponsoring non-state activities and programs, but using college facilities by standard agreement may obtain projection, graphic, photographic, technical or services at fees for personnel and equipment use in accordance with the established rate structure subject to availability of necessary personnel, equipment and facilities; and sufficient advance notice. For these services a paid projectionist, or other appropriate technician approved by the Instructional Media Center, may be required either to operate or to supervise its operation. An estimate of the cost will be prepared in advance of the service; the amount of the estimate is to be deposited in advance of service by the organization at the Foundation Office. Final billing will be adjusted upwards or downwards, if required and excess fees refunded or collected. Arrangements for Media services, must be preceded by official clearance for the use of college facilities.

EXCEPTIONS:

The President of the college may exempt any activity or organization from this policy.

GRAPHIC-PHOTOGRAPHIC SERVICES

Members of the Graphic-Photographic production staff of the Instructional Media Center are available to discuss instructional problems with the faculty members, staff, administration and students and will plan with them for the development and production of appropriate materials. A minimum period of three weeks (longer periods for major projects) will normally be required for the production of instructional materials. Cost of the materials will be charged back to the departments. When material costs for projects exceed ten dollars, requests should be accompanied by an approval from the Department Chairmen. Some specific services of the Graphic-Photographic department are: cover design for a campus publication, graphics for television production, administrative presentations, college displays and instructional aids for faculty including slides, photos, motion picture footage, overhead transparencies, diagrams, charts, maps and hand-out information as well as informative posters for student activities, a variety of signs, and other special materials for classroom instruction. A Media Preparation Area is available for students, faculty and staff to prepare their own materials. Arrangements can be made with the Graphic-Photographic production staff to provide assistance.

TECHNICAL SERVICES

The Technical Services Department of the Instructional Media Center maintains and services the State owned media equipment loaned by, and under the control of, the Instructional Media Center. Equipment under the control of other departments, divisions and schools may be repaired by the Technical Service Department, only if those departments, divisions and schools bear the expense for the parts and supplies used. Privately owned equipment cannot be repaired by this department. The Technical Service department assists the college faculty and staff in planning and obtaining necessary facilities for effective use of media materials in both existing buildings and planned buildings. To expedite future service and reduce costs to the various departments, model type approval or recommendation should be obtained from the Technical Service Department. This will standardize equipment and reduce repair time. The Technical Service Department provides a tape recording and duplicating service for instructors. Under normal conditions and workload, tapes will be completed within two working days. Technical assistance is also provided for special projects, such as tape-slide presentations; but due to time limitations arrangements must be made two weeks in advance.

TELEVISION CENTER

The Instructional Television Center is a department of the Instructional Media Center and operates under its general statement. Services provided by the I.T.V. Center include:

TELEVISED OBSERVATION:

Demonstration lessons in public schools and similar programs are provided by a mobile unit with remote TV tape recording equipment.

DIRECT TEACHING BY TELEVISION:

Lessons, demonstrations, and special presentations may be originated from the I.T.V. studio for transmission to all wired points on campus, or to the local educational television station KIXE (Chennel 9-VHF).

RESOURCE TELEVISION:

A single television camera and viewing monitors may be scheduled for use in a class as a teaching tool. The use of this portable television equipment is especially effective as a "magnifier," and for showing manipulative skills, microscopic techniques or slides, and for meeting similar instructional needs.

PORTABLE VIDEOTAPE EQUIPMENT:

The ITV Center can provide (subject to staff and equipment availability) portable videotape recording services for "micro-teaching," student performance evaluations, and similar instructional techniques.

BROADCAST TELEVISION:

Instructional television lessons are originated in the ITV studio for broadcast on local educational stations for in-service training of teachers and administrators in the college service area.

PROGRAMS FROM XIXE AND EDUCATIONAL STATIONS:

The College closed-circuit television system can receive programs from local and cable television. The ITV Center receives advance program schedules and information concerning programs from these sources that are sent to all department chairmen.

FACULTY ORIENTATION:

All faculty members are invited to visit the ITV Center to become acquainted with the facilities, to test television techniques, and to become familiar with the utilization of television in college teaching. Use of these services are gratis except for off-hour use of facilities, mileage fee for the mobile van and cost of expendable material.

VIDEO TAPE:

The ITV Center has available a limited supply of production and/or storage tapes. Use of these tapes by various departments must be limited to two weeks storage. At the end of two weeks, tapes will be erased unless an exchange of tape occurs between the ITV and participating departments. Contact the Instructional Media for information as to tape costs and vendors of tape.

ADVANCE NOTICE:

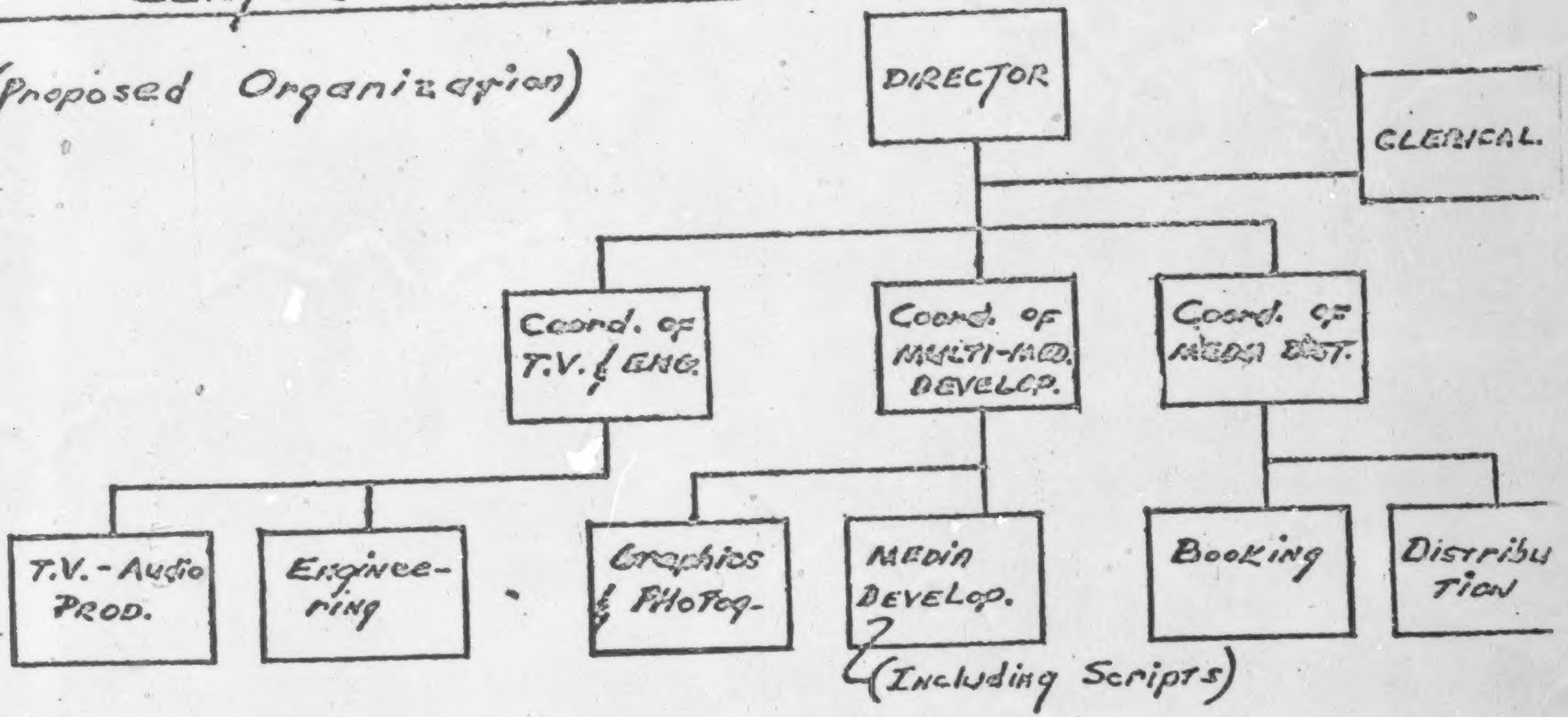
Requests for this service must reach the Instructional Media Center by 4:30 p.m. two school days prior to the request date.

RESPONSIBILITY FOR USE OF MATERIALS AND EQUIPMENT UNDER BASIC POLICY

Faculty members and students using equipment and materials are responsible for exercising due care to protect such materials from loss or damage and to insure their return on time. The State holds borrowers of materials and equipment accountable for the value of the item borrowed. Financial responsibility for replacement or repair in case of negligent damage to equipment or materials lies with the person and/or department signing the loan tag.

INSTRUCTIONAL MEDIA CENTER

(Proposed Organization)


DIRECTOR
CLERICAL.
Coord. of T.V. & ENG.
Coord. of MULTI-MED. DEVELOP.
Coord. of MEDIA DIST.
T.V. - Audio PROD.
Engineering
Graphics & Photog-
MEDIA DEVELOP.
(Including Scripts)
Booking
Distribution

Support Paper No. C.(2)

INSTRUCTIONAL MATERIALS ACQUISITION AND STORAGE

by

Ralph Mills

INSTRUCTIONAL MATERIALS ACQUISITION AND STORAGE

As the College begins to think more concretely about the new library, the Task Force on Instructional Media will no doubt be dealing with questions relating to the programs the new library might be expected to house. At this point in time, I would like to share with you and members of the Task Force some ideas and suggestions.

A New Approach to Media Acquisitions

Thought should be given to the consolidation of our instructional media acquisitions programs. At the present time, we have several programs:

(1) The library acquisition program: Library funds are used to purchase books, periodicals, microfilm and microfische cards. These materials are maintained in central collections in the library.

(2) The department acquisition program: Hardly a "program" in any strict sense. Departmental funds may be used to purchase slide collections, filmstrips and audio cassettes. These materials are maintained, with varying degrees of success, by individual departments.

(3) The College (Instructional Media Center) motion picture film acquisition program: With the implementation of Executive Memorandum 72-1 (January 12, 1972), funds for the acquisition of films were ordered to be set aside by the College, which funds are to be administered by the Office of the Vice President for Academic Affairs. All films are to be stored and maintained by the Instructional Media Center.

It is significant that, regardless of department priorities and needs, accounts supporting these acquisition programs are, for all practical purposes, mutually exclusive. When the resources in one account have been depleted, funds cannot be shifted at the discretion of a department. This is a matter of local policy and could be changed.

The College's instructional program might be better served by a flexible, common acquisitions program for all instructional resource materials. Under such a program, a department would be given an "instructional materials allocation" and, along with this allocation, the ability to purchase the kinds of print and non-print materials it deems necessary to support its own instructional program.

Some Programmatic Considerations

In conjunction with a common acquisitions program, consideration should be given to the centralization of all instructional materials collections, so that they can be properly catalogued, stored, maintained and preserved.

Techniques and procedures need to be developed to protect institutional investments in media materials. For example, original copies of films, phonograph records, slide collections, etc. should be placed in non-circulating categories. Such materials can be cheaply and efficiently duplicated. The duplicates should be circulated. As these become worn and damaged, new duplicates could be produced from the non-circulating originals.

It is important that we begin thinking now about ways to implement such a program because space arrangements would have to be made in the new library facility for the storage of instructional media collections. It may require some special staff training programs to effect this program, and the program will undoubtedly require the development and implementation of new procedures.

Finally, in this context, some thought should perhaps be given to the future programmatic roles of the two units of the institution most concerned with instructional media--the Library and the Instructional Media Center.

I would hope that by the time the new facility is ready for occupancy, the Library will be prepared to acquire and maintain collections of commercially produced print and non-print instructional materials, which would be augmented by such instructional materials developed and produced locally. In addition to serving as a central repository for all instructional materials, the Library should, of course, service individuals desiring access to such materials--both print and non-print materials.

As for the programmatic role of the Instructional Media Center, I would hope that we have a Center that is primarily dedicated to the production of instructional materials; secondarily, the Center would be responsible for development and maintenance of a system of distribution for instructional materials preferably through electronic means.

Support Paper No. C.(3)

EDUCATIONAL TECHNOLOGY IN CONTINUING EDUCATION

by

Ralph Mills

EDUCATIONAL TECHNOLOGY IN CONTINUING EDUCATION

The potential for the application of educational technology in the field of Continuing Education in the next decade is enormous, particularly in the Chico State College service region. However, it is doubtful whether the funds for the purchase of hardware and for the development of software necessary for the implementation of an instructional program utilizing educational technology to any significant degree.

On the other hand, such innovations in educational technology as may be implemented in connection with the regular academic program could have considerable positive impact on the Continuing Education Program. Technologically, there is little difference in the application of educational technology to the instructional programs on and off the campus.

Courses designed to make use of such devices as teaching machines, audiocassettes, videocassettes, programmed workbooks, laboratory kits, radio, or television would have equal utility in the on-campus program and in an external degree program, or in the regular extension program. Such courses could be delivered to students in isolated areas of the College service region directly through the mails, over the radio, over television, or through a combination of these delivery systems, as well as through some live contact with students. Examinations for such courses could be administered to individuals alone or in groups by proctors (say, high school personnel) or by faculty members. Students in isolated areas could communicate directly with faculty via one of several methods: letters, audiocassettes, telephone, personal visits, or in the case of two-way television through live direct contact. The effectiveness of such educational techniques has been demonstrated in a variety of programs across the nation.

Such techniques would be particularly valuable to the Continuing Education Program in its effort to bring educational opportunities to the citizens of northeastern California, particularly to the nine-county college service region. This region covers 30,000 square miles, an area the size of New England, exclusive of Maine.

At the present time, using conventional classroom techniques, it is quite impossible for the College to do an adequate job of meeting the educational needs of the region. For all practical purposes, because of the sheer distances involved, it is impossible for faculty conveniently to meet classes regularly in locations further than 100 miles from the Chico campus, yet much of the service region is well beyond this 100 mile limit.

The capacity of the College to meet educational needs of the region is further limited by the climate and the topography of the region. Two-thirds of the region is composed of rugged mountains, subject to heavy snowfall during the winter months. Too, this vast region is sparsely populated, a factor which adversely affects enrollments in all courses offered at any distance from the campus.

Educational technology provides a way around each of these limiting circumstances. In a mediated course, it would be possible to enroll students from any part of the service region, without respect to distance from the campus and without respect to the season of the year.

Through the use of media techniques, individual extension courses, as well as external degree programs, could be made available to a substantially greater number of citizens in the College service region. On the basis of some limited experience with instructional television courses, it is clear that enrollments in continuing education would increase significantly during the next decade if media techniques were applied to the Continuing Education Program on a broad basis. An average ITV course has enrolled approximately 120 students, whereas the average regular extension course enrollment is approximately 25 students. These same enrollment differences would probably be noted in courses offered via other media.

An even greater potential educational service could be realized if the College were to establish a microwave communication system between the Chico State College campus and other regional institutions and agencies, such as the community colleges, U.C. Davis, Sacramento State College, regional medical facilities, and governmental agencies. Such a system would establish Chico State College as the educational resource center of northeastern California, on a functional basis.

Through a microwave system, live two-way audio and visual communications could be established between as many as six classrooms in different locations within the service area. A reciprocal arrangement could be made with regional community colleges whereby lower division courses could be team taught or alternatively taught. The same arrangement could be made with U.C. Davis and Sacramento State College for lower division, upper division and graduate level courses.

This same system would give community colleges access to the Chico State College computers and permit a similar arrangement between Chico State and U.C. Davis.

Beyond the implications for the regular instructional program, a microwave system would link Chico State with the facilities of KIXE (Channel 9, Redding) and with community television cable systems throughout the area. The potential for open air ITV courses would be considerably expanded in this way. Through such a system, the College could develop convenient two-way instructional programs permitting in-service training programs for public employees as well as the employees of hospitals and other public and private service agencies.

Finally, the microwave system would provide the College with a convenient two-way electronic delivery system for both print and non-print materials. This would afford community college librarians direct access to the resources of Chico State College. Such an arrangement would benefit both the community college students and the Chico State College students in outlying areas.

In summary, it is clear that innovations in educational technology at Chico State College could do much to enhance and expand educational opportunities for citizens throughout northeastern California. The enrollments in continuing education have been steadily increasing in recent years. This trend will continue in the future. The application of educational technology in the Continuing Education Program will give the College the capacity to satisfy this growing need for a broad range of educational services.

Support Paper No. C.(4)

MEDIA AND COMPUTER SOFTWARE SYSTEMS

by

George Arnovick

MEDIA AND COMPUTER SOFTWARE SYSTEMS

Introduction

Modern instructional technology systems are broken down into two parts. The obvious is the associated hardware which are the physical components that make up the system. The second, and by far the most important is the software system. Software consists of man made procedures which provide the instructions and which operate or are used by the hardware system. The variations of software are those for computer programs, and the format, art work, text preparation, etc., for AV/TV systems. In an integrated media system, software must be considered as separate for each of the supporting areas, including new software which combine the separate programs into an integrated one for instructional use. Integrated media software is a new approach, and only a few special software programs are in existence. The development of those necessary software programs are highly sophisticated, and require a skilled technical support staff to provide software services. New skills will have to emerge, which combine computer programming with media program preparation.

Software Development

From a projection of expected media growth via technology several software stages are envisioned. Initially, media software will be prepared by the available support staff; these packages will be low level insofar as staffing is limited as of now. Also the expected rate for turning out software in this area will not place a huge demand on the staff, as those participating faculty at the early stages will be small. Once a faculty development program is in operation, and the faculty made aware of the specialized help involved, software support demand will be expected to increase dramatically. Given these considerations planning should begin as soon as possible to accommodate needed support services.

Computer software programs differ in their developmental and support aspects. Basically two categories of computer software programs are needed. These are programs to initiate and operate the library information retrieval system so that instructional information can be processed, and programs to perform the necessary logical connections and patching of delivery systems which must be switched to insure media integration whereby the faculty/student controlled responses are met with. The implications of a computer information retrieval system for instructional purposes have significant implications and is discussed in order to give the Task Force and interested faculty a perspective which has not been provided for as part of the Task Force Recommendations.

Computer Software Implications in Education

Instructional materials provided via computer systems are either passive, dynamic, or a combination of both. A passive system, for example, selects the proper frame or program, or it switches a desired sequence of AV/TV and presents it via some mode of remote control (usually a terminal) to the educational setting (class-room, library carrel, dormitory, etc.). The system does not look into files and process returns which are content oriented with respect to educational materials. In essence a passive computer system is a faster way to select proper information which in turn must be processed manually.

A dynamic system allows the user to be interactive with the terminal, whereby information is selected by numerous alternatives, and prompting occurs via the computer. Also the return information is in a form so that the user can do some editing of the materials as presented by a terminal teletype, or display system. This permits stored data modification tailor-made to the faculty or student using the system. A dynamic system will also provide self learning instructions for different subject matter. The complexity of these programs depend upon the instructional learning level. A simple and inexpensive system would be learning via a pre-programmed sequential process, where each process next in line is pre-programmed and can not be modified, e.g., an outline, glossary, table, informational terms, etc. A more complex, and also expensive system would be Computer Assisted Instruction (CAI). This system has many alternatives programmed, where output is a function of individual learning time, grasp of understanding of the materials, and the variable complexity of how the feedback information is to be presented. In order to be viable an integrated media system must have an automated system attribute which is as flexible as the needs of the participating faculty and students. This implies that the system must be capable of providing informational indexing, switching, dial access, or other remote control terminals, interactive dialog, and CAI. To expect an integrated system to be less than these functions is wishful thinking. It can not be expected that a system will be developed to have all of these capabilities when operations commence unless budget restrictions are waived, and a carte blanche spending approach is taken. Therefore, the system must evolve through successive stages and costing. The developmental stages must be planned so that modular system growth can be achieved through levels of experience, design, software modifications, and costs (software, personnel services, operating, hardware).

Development Requirements for Software Functions

There needs to be developed an information distribution network, which is part of a communications system that can serve internal and external (to the College) requirements. The system should take advantage of recent developments in minicomputers, and in computer-terminal and communications technology. A local stand-alone computer system with file access and capability to be tied into a communications distributed state wide system should be planned. The alternative is a large central State computer with lines to local terminals. In terms of communications costs, ease of local operations, system degradation, and file control a central system is not cost effective. The system should provide the following software development in order to be responsive as an integrated learning resources process:

1. A conversational student utilized higher level language must be provided for use on a classroom basis.
2. Extending the above to individual localized remote off-campus centers.
3. An editing and file system for student use, whereby the professor can remote access data for batch processing at the computer facility.
4. A remote classroom control package so that the professor can request supporting information indexing, and AV/TV sequences.

5. Provide a CAI system so that the faculty can develop individual course materials.

6. Testing and course evaluation software would be required for on-line demand by the professor.

7. In addition to providing software for terminal systems, programs must be developed to handle visual display units in a flexible conversational manner.

8. The local processor must have a dynamic program for allocation of memory using swapping techniques.

9. Student oriented remote entry applications programs system is needed. The language should be standard, so that different job control languages need not be learned.

Recommendations

Based on the requirements for computer and media software the following recommendations are made:

1. That the Task Force be made aware of the library automation project as being vital to the introduction of an integrated media system, since the library computer system will be concerned with information retrieval and distribution. Further, the system will provide the necessary technical link to media and CAI distribution for instructional purposes. That the automation effort be made a part of the Academic master plan, and a budget made available from the Administration, to include other possible supplemental support through the Chancellor's office. An automated data base within the library is critical to the success of an integrated media system. Therefore, the Task Force begin an evaluation and recommendation effort as part of the committee's concern should it be given an advisory or continuing role for Fall 72-Spring 73 as stated in Recommendation V of the Spring Final Report.

2. To insure the proper development of software, which includes media and computer programs (CAI), that the media center and Library Computer Automation program develop a coordinated developmental plan and budget. Media development will be needed to aid the faculty in the design of software to be included as part of those newly created instructional programs. That position formulas be determined for media technical/graphical specialists as a function of: a) preinstructional development needs, and b) a staffing ratio to assist in the preparation of course materials by the number of participating faculty. That computer assistec instructional programs (CAI) be initiated with interested faculty, and that their development be the responsibility of the faculty member assisted with the proper professional/technical staff within the Library computer automation area. These individuals are systems analysts, programmers, and CAI systems specialists. That a budget for positions be worked out similar to the recommendations made above for media specialist

3. That the computer system for learning resources be clarified with respect to the ongoing campus computer center. As currently planned the stand

alone computer system for library functions should include expansion criteria to accommodate information retrieval enabling the system to meet the needs of a distributed learning network, linking the library and media center to the external users. That based on future machine capacity handling, a link (timeshared) be inplemented between the library computer system, and the campus computer system. This sort of link would greatly enhance the expected user growth of the learning resource distribution system via the utilization of timeshared terminals and other learner access devices. That the responsibility of computer support be determined with respect to administrative leadership for the given computer systems available to instructional resource improvements. That the computer system needs and requirements be systematically planned and coordinated with the College Computer Advisory Board, and the Statewide Committee (SCADPAC) at the Chancellors Division of Information Systems concerned with instructional and library use.

Support Paper No. C.(5)

PROPOSAL FOR ASSESSMENT OF THE USE OF INSTRUCTIONAL MEDIA

by

Frank Pennington

PROPOSAL FOR ASSESSMENT OF THE USE OF INSTRUCTIONAL MEDIA

On numerous occasions the Task Force has wondered about the extent of media use by the faculty. Records of AV deliveries only tell part of the story and suggest that a survey of the faculty should be made if we want to get a better picture. Such a survey might permit us not only to describe what faculty are now doing but it could indicate what they would like to do.

One approach to the problem is to view instructional media as a matrix (see attached grid). The grid might be simplified and faculty asked to evaluate their use of instructional media in and out of the classroom and estimate student use in the same categories. Grids A and B indicate how such an analysis might vary in two different classes. If this analysis of what faculty now do is coupled with an analysis of what faculty would like to do if they had the hardware and/or if they had the software, we might have a basis for intelligent future planning.

INSTRUCTIONAL MEDIA MATRIX

	FACULTY		STUDENTS		Relative Emphasis
	Inside Classroom	Outside Classroom	Inside Classroom	Outside Classroom	
Lectures and Lecture Notes					
Laboratory Aids					
Textbooks and Manuals					
Library					
Audiovisuals					
Overhead Projectors					
Slides					
Film Loops					
Movies					
TV Tapes					
Other					
Television					
Occasional tapes					
Major portion of course					
Computers and Calculators Small					
Large					
Tutorials by Faculty					
Audiotutorial					
Audio only					
Slides and audio					
TV					
Computer Assisted					
Film Loops					
Other					
Other					

A

Simplified

INSTRUCTIONAL MEDIA MATRIX

	FACULTY		STUDENTS		
	Inside Classroom	Outside Classroom	Inside Classroom	Outside Classroom	Relative Emphasis
1. Lectures	98	80	100	50	328
2. Textbooks	0	10	0	48	58
3. Library	2	10	0	2	14
4. Audiovisuals	0	0	0	0	0
5. Television	0	0	0	0	0
6. Computers	0	0	0	0	0
7. Audiotutorials	0	0	0	0	0
8. Other	0	0	0	0	0
	100	100	100	100	

B

Simplified

INSTRUCTIONAL MEDIA MATRIX

	FACULTY		STUDENTS		
	Inside Classroom	Outside Classroom	Inside Classroom	Outside Classroom	Relative Emphasis
1. Lectures	50	20	70	30	170
2. Textbooks	0	10	0	20	30
3. Library	5	10	0	10	25
4. Audiovisuals	25	20	20	10	75
5. Television	15	20	10	0	45
6. Computers	0	0	0	0	0
7. Audiotutorials	0	20	0	30	0
8. Other	0	0	0	0	0
	100	100	100	100	

Support Paper No. C.(6)

FACULTY INVOLVEMENT IN MEDIA DEVELOPMENT AND UTILIZATION

by

George Johnson

FACULTY INVOLVEMENT IN MEDIA DEVELOPMENT AND UTILIZATION

One of the major concerns of the Instructional Media Task Force is related to evaluating the means by which faculty members can be encouraged to keep pace with exploding media transmission technology. The problem is more precisely defined as two related, but different, situations.

The first situation results from a given instructor who is interested in media and data use in the classroom but who is frustrated in his effort to utilize equipment and develop appropriate software.

The second situation results from a lack of interest or overt skepticism toward certain media and data presentations in the classroom.

A solution to the first type of situation is the least complex to formulate and relates to the concept of "removal-of-obstacles." The main thrust of the recommendation of this Task Force relates to the necessity of integrating the dissemination of information function so as to eliminate as much as possible the inconvenience of arriving in the classroom with a media package as contrasted to the traditional piece of chalk. The time and effort involved in developing a program for presentation in the classroom is documented in various sources* and known from personal experience.

One implementation of the removal-of-obstacles policy has been presented in the Utah State program (among others) by (1) the implementation of minigrants to focus on software development and (2) with a basically integrated information dissemination organization to allocate funds for equipment package development maintenance and distribution services. This is the easiest aspect of the problem to formulate and implement, although no easy task in any case. This area most likely will be the main focus of the University media development program for at least the next four year period. The problem of obstacle removal is most critical, and where the initial monetary and organizational support should be focused.

The question that has been posed relates to the effectiveness of minigrants and organizational efficiency in eliminating the barriers to classroom media innovation. The type of difficulty not addressed by these two tools is what one might call educational inertia. Some minimal amount of familiarity with a given new technique, process, or approach must be achieved before most individuals will continue on their own in a self-study or self-development program.

One approach to enhance the effectiveness of the minigrant and organizational effectiveness effort is to evolve a portion of a position in each organizational unit (school) to serve the function of an innovative or media specialist. This individual would be formally trained in areas relating to subject matter being taught in a given unit, but would have an interest in media, computers, and classroom innovation. He would attempt to provide the very important "human" contact with media--speaking the same language and working with the same students--which in many cases may provide the margin necessary for program effectiveness.

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*"Plan to Coordinate Learning Resources at Utah State University with Emphasis on Improvement of the Learning-Teaching Process," pp. 2, 3, February 17, 1970. (See Reference C(1))

A solution to the second type of situation is a long run problem of faculty improvement and educational effectiveness. One of the most crucial problems in the solution of this situation is the problem of effective and accepted evaluation of educational effectiveness. Once an individual accepts the validity of an evaluation of learning-teaching effectiveness, problems can be identified, solutions found.

Support Paper No. C.(7)

REGIONAL RETRIEVAL AND DISTRIBUTION OF INFORMATION

by

Royd Weintraub

REGIONAL RETRIEVAL AND DISTRIBUTION OF INFORMATION

The recent knowledge explosion in all fields has necessitated the development of systems giving access to information. Individuals are often handicapped by the difficulty involved in getting to needed resource material. Such material might cover a range of formats including books, films, computer access, as well as formal instruction, etc. In a region geographically as large as the one served by Chico State College, this problem is further aggravated. To bring resources to the region often involves delayed truck or mail shipment of print and non-print materials. Faculty members must often travel several hours under harsh weather conditions to teach an extension class. Professional groups can rarely meet together because of the physical distances involved.

One solution would be the development of microwave communications systems. Such a system would provide instant transmission of information to various key locations within the region. By utilizing the technology now available, a single microwave link can simmultaneously transmit 12 discrete programs. If a two-way link were employed, then a resulting communication feedback loop would permit interaction to occur as normally as if the participants were meeting face to face.

Additional examples for using this kind of system are as follows: An individual in a remote location could access a range of resources at the college. Classes or conferences could be held simultaneously at several locations. Computer terminals could be located at remote points with direct interactive capability with the campus computer. Those examples merely touch upon the vast possibilities of the system which can truly provide an extended campus.

Support Paper No. D.(1)

FACULTY RIGHTS AND PROPRIETARY COPYRIGHT IMPLICATIONS

by

William White

FACULTY RIGHTS AND PROPRIETARY COPYRIGHT IMPLICATIONS

Recent activity in the California State College System indicates an accelerated trend toward use of modern electronic media devices and methods of distribution to support instruction. At Chico State College a new media center will be charged with the development of audio and video tapes, films and other types of educational materials. This activity is in step with a national trend toward deliberate support and development of instructional materials that employ modern technical devices and systems.

This trend requires a faculty-student-institutional relationship that is relatively unique and potentially troublesome in terms of materials development and usage. The application of new technologies to instruction requires faculty-student access to expensive equipment and collaboration with staff specialists who know the potentialities and limitations of the equipment. In certain cases, media-supported instruction explicitly may be commissioned and supported by the institution, as well as to more traditional faculty-initiated media usage to enrich portions of individual courses.

State College participation in the direct development and distribution of course content and materials (as contrasted with individual instructors seeking media materials for upgrading portions of particular courses) offers the potential of improved quality and increased usage of media-based courses. Attendant to this participation are the potential problems relative to ownership and use of materials in situations where the institution, through the investment of materials and staff, has become an active partner in course content and materials development. Any institution that seeks to update the art of teaching through media must concern itself with the potential of faculty-student or institutional exploitation through unregulated or ill-defined rights and protection that each must have. The need for such protection is imperative. School and system-wide policies are needed to govern ownership, use (external as well as internal) and rights to income produced by external distribution of school-sponsored materials. The California State Colleges are uniquely burdened since any major alterations in the traditional methods of teaching must be structured within the framework of an existing and complex set of system and institutional management formulas developed decades ago. The current wide-spread desire to use media precludes easy adaptations because of these management formulas.

Ultimate responsibility for development of legal guidelines and contractual agreements between the institution, faculty and students should rest with the Faculty Senate and Administration with adequate input from faculty employee organizations and student organizations. The major areas of concern and those requiring legal policy guidelines which can serve as the basis for case by case written agreements are as follows:

1. Ownership and Copyright. (Who owns what parts of the product and who secures the copyright, if any?)
2. Initial Faculty Compensation. (Is the professor given time off from other teaching duties or is he paid for additional effort?)
3. Internal Use and Re-Use. (How long and under what conditions can the school continue to use the product? If multiple sections are

taught by media with faculty savings, who realizes such savings--school, department, instructor? Who can sell - lease - rent or give away what to shom?)

4. Revision. (Can the professor demand revision? What protection does the school have?)

5. External Distribution. (Who can sell - lease - rent or give away materials to other schools in the CSC system, other systems, commercial organizations?)

The scope and complexity of the five points listed above are obvious. The College should seek legal assistance in formulating a set of policy guidelines that will be operable at CSC. However, there are several general recommendations relative to these five points that are important and the Faculty Senate should consider them and take action as soon as possible.

The following recommendations are in part taken from or in concert with the Laser Report on Television for the California State Colleges[1] which studied and submitted recommendations regarding TV in the State College System in 1961. Those recommendations that are particularly germane to the legal issues listed above follow under Attachments I and II. Attachment III is the AAUP Policy on Educational Television.

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[1] Marvin Laser, et al; Television for the California State Colleges: A Report to the Chancellor and the Trustees (Los Angeles, 1961).

ATTACHMENT I

Compensation for Instructors of Televised Courses

The following policy statements concern teaching load for faculty members engaged in teaching televised courses:

I. Released Time During Planning Semester

Each instructor shall be given a minimum of 3 units of released time for planning a television course.

II. Teaching Load During the First Semester of Production

A. For a Single Instructor:

1. Two or more class periods presented each week over TV will constitute the instructor's full teaching load.

B. For Two or More Instructors:

1. An appropriate minimum number of units will be allocated to the intra-institutional instructional staff of a TV course of one or more class periods per week.
2. For any interinstitutional course(s) which may be developed, due consideration concerning added released time for faculty members must be given because of the increased complexity of preparing and presenting the course(s).

III. Teaching Load During Subsequent Semesters

If the course is to be repeated live in subsequent semesters by the same instructor(s), the teaching load shall be calculated in the same way as shown above in II A and B. Released time in the planning semester may be waived by the mutual consent of the instructor(s) and the chairman of the department.

IV. Teaching Load of Non-TV Sections Accompanying TV Course(s)

Non-TV sections accompanying a TV course (e.g., discussion, quiz, laboratory, performance, activity, etc.) will be staffed according to present formulas.

V. Repetition of Taped Course(s) on Originating Campus

When a taped TV course is repeated in subsequent semesters, the TV instructor who made the tapes shall be given a minimum of 3 units of released time during each semester that the tape is used in order to permit consideration of revision of the tapes, conferences with students, and conferences with instructors of the non-TV sections accompanying the course. When two or more instructors are responsible for the course, additional units of released time up to a maximum total of 9 shall be assigned. In the event that substantial revision of the tapes is necessary, the faculty member(s) must be given additional compensatory load reductions.

VI. Repetition of Taped Courses Elsewhere

See the policy recommended under Attachment II.

ATTACHMENT II

Copyright and Contract Arrangements

The following are guidelines to legal counsel:

I. Copyright: It is assumed that the intent of video taping is repeated use after the first presentation. Video taped program material shall be copyrighted in the name of the instructor(s) preparing and presenting the material. Such material may be licensed by the copyright holders to institutions desiring to utilize the material.

II. Licensing:

A. No faculty member may contract away rights to withdraw part or all of program material or to assign away rights in perpetuity.

B. The contract period should be for a maximum of three years with the possibility of contract renegotiation following:

C. The instructor will not receive royalties for the presentations of televised material on the originating campus.

D. Simultaneous and/or subsequent televising on other state college campuses will be subject to royalty payment to the instructor and the originating institution according to a formula to be worked out in further deliberations.

E. When video taped materials are used by institutions outside the California State Colleges, the instructor and originating institution will share in royalty fees according to a formula to be worked out in further deliberations. It is recommended that distribution outside the California State College system be exclusively on a rental basis which will provide royalty monies to instructor and institution.

F. Copyright for workbooks, guides, and other published materials used to support televised programs should be in the name of the instructor(s), who then receive(s) royalty fees for the sale of such materials.

ATTACHMENT III

STATEMENT ON EDUCATIONAL TELEVISION*

The Statement which follows is published at the direction of the Association's Council in order that chapters, conferences members, and other interested persons may have the opportunity to express their reactions to it before further consideration by the Council and Annual Meeting. This Statement is a revision of policy recommended by Committee C and approved by the Council and the Annual Meeting in 1962. (See AAUP Bulletin, Autumn, 1962.) The revision was prepared by Professor Winston W. Ehrmann (Sociology), Cornell College, Chairman, Committee C Subcommittee on Educational Television. Comments concerning the Statement should be sent to the Washington Office.

PREAMBLE

Televised instruction may be by recording, "live" performance, or a mixture of the two, and may be broadcast or presented on a closed circuit. In closed-circuit transmission, the instructional program usually appears at "viewing stations" (receiving sets) within the institution. Broadcasting is often designed for the general public or off-campus students as well as students located on campus, and frequently includes programs of cultural enrichment as well as formal course instruction.

Both recorded and "live" performances, whether broadcast or presented on closed-circuit, may involve special legal or administrative problems. Recording, for example, is technically and administratively simpler than actual performance, but may require the consideration of additional questions of copyright, not only for materials previously protected but also for materials created expressly for the new program. Closed-circuit television is more suitable than general broadcasting for use as a supplement in regular course instruction; its use, however, raises questions of the appropriate distribution of authority and responsibility between the administration and the separate departments or programs within a given institution. Broadcasting is technically more complex, more expensive, and directed to a wider audience, and it is under the regulation of the Federal Communications Commission; for all these reasons, it is likely to entail a more elaborate organizational pattern than that required for closed-circuit instruction, with a greater measure of autonomy for the technical and producing staff and a larger expenditure of time and resources on extra-institutional goals.

More important, the development of educational television has brought into being conditions never envisaged in the earlier academic tradition, raising many basic questions about standards for teaching and scholarship. Six of these altered conditions deserve special mention here. One is that the teacher does not have the usual face-to-face relationships with the student in or outside the classroom. Another is that special means must be devised for assigning, guiding, and evaluating the work of students. A third is that the teacher is using a means of communication dependent upon an extremely complex and expensive apparatus which is not under his exclusive control and which requires for its operation special technical knowledge. A fourth is that the teacher's lectures and demonstrations can be recorded and reused without the teacher's being present. A fifth is that the teacher"s rights, whether academic or legal, are imperfectly understood. And a sixth is that little careful attention has been given to the question of the faculty's authority in determining policies and procedures for the use of television in the institutional program.

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*From AAUP Bulletin, Autumn 1968, pp. 314-316.

It is imperative, therefore, that institutions now using or planning to use television as an incidental or integral part of their programs should give full consideration to the educational functions which the new medium is intended to perform and to the specific problems which any given application will raise. Traditional principles of sound academic procedure will often apply to the new medium, either directly or by extension, but they will not always cover the new problems. When they fail to do so, new principles must be developed by means of which the new medium may be made to serve most effectively the basic, continuing educational objectives of our college and universities. It is the purpose of this Statement to offer some appropriate guidelines to this end.

PRINCIPLES

General

The use of television in teaching should be for the purpose of advancing the basic functions of colleges and universities to preserve, augment, criticize, and transmit knowledge and to foster the student's ability to learn. The development of institutional policies concerning educational television as an instrument of teaching and research is therefore the responsibility of the academic community.

A faculty member who engages in commercial rather than educational television as a writer, performer, technical consultant, or in any other capacity, should abide by the codes, practices and customs applicable to that industry. Usually no restrictions should be placed by the institution on his occasional activities in commercial television. Such activities should be sufficiently limited so that they do not interfere with his obligations as a faculty member to his institution. In the event that there are sufficient reasons for his greater involvement in commercial television, he should make appropriate arrangements, such as for a reduced teaching load and compensation or a leave of absence, in accordance with governing academic principles. When a faculty member is engaged in educational television--that is, television directly related to an academic program--he should conform to governing academic principles.

Areas of Responsibility

The governing board, administration, and faculty all have a continuing concern in determining the desirability and feasibility of television as an educational instrument. Institutional policies on educational television should define the respective areas of responsibility for each group in terms of the particular competence for the functions which that group undertakes. In developing these policies, all three groups should bear in mind that television is one educational means among many, and not an end in itself, for carrying out the basic functions of a college or university.

Educational Policies

The faculty should have primary responsibility for dtermining the educational television policies of the institution. The responsibility should be conferred and defined by regulations promulgated by the governing body. The rules governing educational television should be approved by vote of the faculty concerned or by a representative faculty body, officially adopted by the appropriate authority and published.

The departmental faculty should determine the extent and the manner in which closed-circuit television should be used in courses offered by it in resident instruction. Such departmental practices should conform to institutional policies.

Courses to be given for credit by television broadcast, whether for resident or extension credit, should be considered and approved by the faculties of the departments, division, school, college, or university or by such representatives of these bodies as pass upon curricular matters generally. These provisions should apply to courses whether given by actual (live) performance or by recordings.

The faculty should determine the amount of credit which may be earned by a student toward a degree in courses given by television broadcast.

The faculty of the college or university should establish general rules and procedures for the granting of teaching load credit in the preparation and the offering of courses by television broadcast and for the allocation of supporting resources. Within the general provisions of these governing regulations, specific arrangements for courses offered by its members should be made within the department.

The initial planning for a television course, whether by live broadcast or recording, requires considerable time and effort in the preparation of scripts, course assignments and tests, participation in rehearsals, and administrative arrangements for students. The teacher may, therefore, need to devote full time for the period of a term or more to this purpose. The demands of offering a course by broadcast require not only appearances before the camera but also communications and conferences with students, the evaluation of their work, the keeping of their course records, and also the supervision of academic and clerical personnel who assist in this work. Accordingly, one course may constitute a full load for the teacher.

Adequate support in the form of academic and clerical assistance, facilities for communicating and conferring with students, library resources, and an operating budget should be provided the teacher so that he may adequately carry out his instructional responsibilities. Since instruction by television broadcast does not allow for an exchange of reactions between students and teacher in its "classroom setting," adequate provisions should be made in courses given by broadcast for the students to confer with the teacher, or his academic assistant, by correspondence and, if possible, in person.

The faculty should make certain that live or recorded programs which are prepared by the institution for other colleges and universities, whether for course credit or not, meet the same standards of appropriateness and excellence as those prepared for use in its own institution.

Courses prepared by the institution for elementary and secondary schools should meet the academic standards set by the faculties of the disciplines concerned.

The faculty should give encouragement to television programs of cultural enrichment addressed to the general public as well as to its own students.

Teaching Appointments

The precise terms and conditions of every appointment should be stated in writing and be in the possession of the faculty member and the institution before the appointment to participate in instruction by television is consummated.

A member of the faculty should not be required to participate in educational television as teacher, writer, consultant, or in any other capacity unless he consents in advance to such participation. His refusal of a request for this kind of an assignment should in no way affect his present or future status as a faculty member.

A prospective member of the faculty should not be required to participate in educational television instruction upon his acceptance of an appointment unless he has agreed to do so in advance as a condition of his appointment.

Academic Freedom

A faculty member engaged in educational television is entitled to academic freedom as a teacher, researcher, and citizen in accordance with the provisions of the 1940 *Statement of Principles on Academic Freedom and Tenure*, jointly developed by the Association of American Colleges and the American Association of University Professors and endorsed by many educational and professional organizations.

Because television production is a form of publication, a faculty member has the same freedom to enter into an agreement with an educational or commercial agency to produce or otherwise participate in, a television program as he has in arranging for the publication of his own writings with a commercial, university, or other nonprofit press or with a scholarly or professional journal.

Selection of Materials

The teacher should have the same full responsibility for the selection and presentation of materials and of points of view in courses offered by television as he has in those given by traditional means. For departmental and interdepartmental projects the faculty concerned should share this responsibility.

Technical Considerations

A faculty member who undertakes to teach by television should acquaint himself with the rudiments of the technical procedures in recording and live performance as they relate to his own professional activity so that his subject matter may be most effectively presented, and he should cooperate with the producer and other television technicians in every reasonable way. The teacher, nevertheless, has the final responsibility for the content and objectives of the program.

Recordings

A program of instruction offered over television and especially one which has been prerecorded usually involves proprietary rights of one or more individuals or a recognized legal entity such as a corporation or association. The faculty should establish and publish appropriate guiding policies, procedures, and explanations so that the exercise of these proprietary rights and their transfer will contribute to the educational purposes of instructional television as well as protect the proprietary rights of the copyright owners.

A recording of a teacher's presentation in the traditional classroom setting, whether for reuse on educational television or for any other purpose, should be made only with his consent and his prior knowledge as to the precise nature and purpose of the recording. The proprietary rights may be transferred in whole or in part through a recognized legal device. An owner may, however, grant permission for a recording in which he has a proprietary right to be used by an institution, an educational television network, or other agencies or individuals without relinquishing his copyright in the recording. Permission to use the copyrighted works of others in a program should be secured from the copyright owners. In actual practice, an institution is typically the owner of an educational program, such rights having been acquired by prior agreement between the institution and the individuals involved in the creation of the program. In some cases, however, such individuals retain the copyright in the program.

A recorded program of instruction is an academic document. Hence, like any other scholarly work, it should bear the name of its author, his institutional affiliation, the date when it was recorded, and appropriate acknowledgments.

Provision should be made for faculty control over the future use and distribution of a recorded course of television instruction and for its periodic review by the original teacher-author, or by an appropriate faculty body, to determine whether it should be revised or withdrawn from instructional use because of obsolescence.

Winston W. Ehrmann (Sociology, Cornell College), Chairman, Subcommittee on Educational Television of Committee C

Neill Megaw (English, Williams College), Chairman, Committee C on College and University Teaching, Research, and Publication

Support Paper No. D.(2)

PLANS AND PEOPLE

by

Joseph Scott

PLANS AND PEOPLE

Central Concern of the Educational Enterprise

While much of this report concerns itself with tools, systems and administration exigencies, it must be recognized that the central concern of the document is, nevertheless, the improvement of student education. It is sometimes seemingly overlooked that media centers, books, tapes, computers and the other accoutrements of a mechanized educational system are tools, no more or no less. Like tools they are indispensible, useful, or mere affectation depending largely on whether or not there has been a demonstrated need for them, whether there is a skilled user and whether they produce the desired outcome. Like tools too their importance can never displace the real focus of the activity, that is the final product. In an educational institution such as ours the final product is an educated student. The educated student is the central focus of the entire process, the only raison d'être. It follows then that the concentration of effort in inspection, measurement, concern, and change is on the student, and decisions regarding software, hardware, media technologies and media centers make sense only in terms of observed or desired changes in that student. Technology for technology's sake merely turns a fad into a farce.

Concern of Task Force Report

The central concern of this task force then is the improvement of the student education and the exploration of the possibility that this might be achieved through the use of modern electronic media. Improvement of student education might be interpreted as the increase in the amount of knowledge accrued, or in the level of skill attained, or in the degree of sophistication acquired in dealing with problems or ideas. Alternately improvement might be limited to acquiring the present level of knowledge, skill or sophistication, but doing so more easily, more quickly or more enjoyably. Ideally, the student might improve both ways. Ideally, too, this committee's effort is directed towards this latter end. Our belief is that intelligent and considered use of modern electronic technology can accomplish this. But it is unlikely to accomplish this ideal in toto, immediately.

Past Experience with Innovation

Other sections of this report will have demonstrated the feasibility and long run efficiency of a media system. From this it is possible to argue that the student might learn more easily, with less trauma and inconvenience. It can be demonstrated less convincingly, however, that media can increase the degree of knowledge or level of skill of the student. A very comprehensive and pessimistic review of the effects of many practices and innovations in the field of education is contained in Chapter 7 of J. M. Stephens book, The Process of Schooling, (see Bibliography). In this chapter he examines the results of countless studies covering nineteen variables which are assumed to affect education. They range from extent of attendance to the use of media and programmed instruction. While some studies show positive results and some show negative results, the only final conclusion must be that one cannot predict that any one of the nineteen variables reviewed will change a student's performance when that performance is measured by achievement tests. More recent USOE reports indicate little if any improvement in the performance of pupils in public school as a result of such massive innovative programs as "compensatory education" and "performance contracting". The prospect of much improvement in student performance (if that performance is measured by achievement tests) as a result of innovation, therefore, is not great. Add to this the result of a recent poll on this campus, by one of the members of the task force, which indicated that only 3% of 259 students questioned believed that they learned better from TV, movies, etc. than from more traditional approaches, and one sees the need to proceed in this area with caution and consideration.

Considerations in Introducing New Programs

Caution here must not lead to timidity, which might result in vacillation or inaction. Rather what is called for is a considered rational approach that will continually assess, evaluate and revamp as that program unfolds. A mechanism must be established to determine if all of the specified goals are being attained as a result of the establishment of the new program. If the goals of a program are really important, then it seems eminently reasonable that users of the program ought to be able to check occasionally to determine if these goals are being attained. A subsystem must be included which will accept and evaluate the feedback provided relative to attainment of the goals. On this basis modifications can be made, and if necessary, the program can be dismantled. The concern which suggests these steps is that once implemented programs rather than the goals become important, and hypotheses become institutions without ever being put to the test.

It follows from this that as the new media system comes into being that a set of specific goals with the student as their focal point need to be developed and operationalized. This needs to be done to the point that instruments can be developed which will then specify the effect of the new system on the student's behavior. Because effect the student's behavior it will, and the behavior of faculty and staff and administrators.

New Programs, Plans and People

Winston Churchill, in speaking against a bill to redesign the House of Commons, summarized his position with one of his astute aphorisms. He said, "We shape our buildings and then our buildings shape us." Increasing sensitivity of the design professions, and evidence being accumulated in a number of the social sciences continues to attest to the validity of this position. One of the values of a task force report such as this then, is to enable administrators and other interested parties to make some estimate of the ways in which a number of possible new library buildings and their contents will shape our behavior in the future, and then choose the manner in which we believe we wish to be shaped. When we plan a new program, curriculum or media center we are not merely designing a set of courses or activities or a particular arrangement of media objects, we are projecting a new environment in which a known or unknown group of people will have to exist, perform and produce.

In view of this, it follows that the planning of new programs or centers must be done giving due consideration to the needs, aspirations and capabilities of those people who will have to live with and/or work in these programs or centers. This involves not only defining the goals of the program, in terms of achievement but also in human terms (needs, values, aspirations) and in addition examining the projected roles which will be assigned to people, to determine that these roles are compatible with their humanness. These priorities seem so patently obvious that their emphasis might be considered unnecessary. Such emphasis is not, however, misplaced. Through the negliect of such thinking man has reached a point in his technological development where he has produced an environment in which, according to an increasing number of our colleagues, there is some probability that he may not be able to survive. Through the neglect of such thinking public education from kindergarten to Ph.D. has increasingly disenchanted students, faculties and taxpayers. The charge here is not that the present unhappy circumstances, derived from lack of planning and rational thinking, but rather that they derive from lack of planning of a particular kind. The kind of thinking which has led to many of our present problems is of a blindered linear kind, the kind that states an economic, a scientific, a technological or an administrative goal and then single mindedly pursues the attainment of that goal.

This blindered thinking is obsolete.

A new approach to planning is necessary, an approach which not only chooses a goal but one that in addition realizes that the attainment of a goal involves ipso facto the constitution of a new environment which will affect in many obvious and subtle ways the behavior and well being of those who will have to live in it. When we plan a Media center we not only devise an ordered and efficient system for procuring, developing and delivering information, we are devising a new and different environment which may affect the learning of students, the teaching of faculty, the administrative structure and many other factors not least of which is the very subject matter taught. How students feel about subject matter, school, or scholarly activities will be affected. How faculty feel about teaching, students, colleagues and administration will be affected. How the extra campus community perceives the campus, the faculty and the pursuit of scholarly activities will be affected. The production of flow charts, indexing of invoices and the linkage of the campus physical facilities, though important, is but a small part of what should be included in these plans. The roles of, costs to and effects on, several groups of people need to be examined.

New programs, centers, etc. involve directly or indirectly four groups of people: students, faculty, staff and administration and taxpayers. Almost any new program will affect the first three of these groups, some will affect all. It is obvious that any program that adversely affects the four groups is nothing short of lunacy. But a program that adversely affects even one of the groups should be considered undesirable and inadequate. A Media Center which pleases everybody but the students makes no sense educationally or otherwise. A program which students and faculty find uncommonly stimulating but which is an administrative fiasco makes equally little sense. The desired outcome then would be one which includes ease and efficiency of administration, increases or at least causes no loss in student learning, produces positive student effect and which faculty find efficient, useful and not exploitive.

Statement of Specific Goals

The enormity and difficulty of this task might induce timidity and conservatism. Such a reaction is almost by definition nonproductive. What is needed is that the planning committee extend its statement of goals to include these larger considerations. The task force proposes a new environment in which the latest available technology will be made available in order to:

1. enhance the learning of the students, by allowing the student more flexibility in planning his college program, enabling him to be more efficient in the retrieval of learning materials and giving him a larger

variety of media through which to acquire knowledge.

2. make teaching easier, more efficient and more enjoyable, by making an abundance of supporting materials available, making their production or procurement more efficient, and utilizing media to release teachers for more educationally worthwhile activities.

3. decrease administrative problems by streamlining operational procedures.

Each of these statements is specific enough to enable any group to develop an instrument and get a measure of whether or not the new system is achieving its stated goals.

Stating the goals is, however, only the first step. The dependent relationship between the goals stated and the programs then established needs to be specified. Many programs are proposed by educators and educational technologists the goals of which are noble, benevolent and highly desirable. In too many of these programs, even a perfunctory examination will show that there is little relationship, causal or even casual, between the proposed methodology and the stated goals. There are several ways in which an estimate of the probability of success of success of a proposed program relative to the specified goals can be obtained:
(1) A review of the research in education and psychology such as that previously reviewed above and elaborated in Stephens' book.
(2) A survey of student attitudes might be performed relative to the proposed program and its goals.
(3) A survey might be made of present faculty to determine their feelings, whether the proposed programs would meet their needs and whether if and how they might use them.

A review such as this must at this point, it is believed, lead to the conclusion that the introduction of a new media system will probably not lead immediately to any great increases in student achievement level. It will, however, quite likely lead to some of the other goals stated above i.e., allow the student more flexibility, make teaching more efficient and enjoyable etc. Even this, however, should be treated as a hypothesis, that is it should be evaluated periodically to determine whether or not it is efficient for students, enjoyable for faculty etc. Starting from this position then avenues for improving the program must be sought.

Inadequacy of Present Assessment Instruments

An important point to consider here is that we have only a vague idea of what our product is, that is to say that we would have great difficulty in stating what an educated student would be. And it is difficult indeed to advance with determination towards a goal of which one is only vaguely aware. If one did get some agreement on what constitutes an educated student, then there follows the difficulty of measuring it. It is hardly conceivable that all of what constitutes an educated person can be measured by achievement tests in subject matter content. Some portion of our end product is being allowed to go by on faith and is never inspected, or examined, nor in fact is its presence even sought. Whatever this intangible other beyond content is, it must be assessed in some fashion if we are to evaluate to any great extent the affects of introducing media. It is sometimes held that this intangible is what is missing from the education of students at such institutions as the Open University but no evidence pro or con can be offered unless some means for its assessment is developed. Developing some statement regarding what these intangibles might be and then devising instruments for their measurement or identification might be a worthy task for another task force. Unless such a project is undertaken at some level, evaluation of the new program is likely to be quite shallow and may only show positive results in economic and administrative areas.

Support Paper No. D.(3)

QUESTIONNAIRE ON LEARNING HABITS

For each question in each category, i.e. freshman, sophomore, etc., the table indicates the relative distribution and if students responded by answering only one out of five, the fractions would total "1" in a given category. This is true, for example, in 3a for graduate student: .75 + .25 = 1.0. However, in this questionnaire, students were permitted to choose one or more of the choices and consequently some of the totals are greater than 1.0. If one compares the relative sizes of the fractions, one can determine preferences.

STUDYING BEHAVIOR QUESTIONNAIRE

Response Distribution by Sex/Class

Question: (One or more choices allowed)	Females						Males					
	Gr	Sr	Jr	So	Fr	Tot	Gr	Sr	Jr	So	Fr	To:
1. I do most of my studying:												
a. in the Library	1.	.34	.28	.14	.15	.21	.25	.18	.26	.25	.20	.23
b. at home in my room		.28	.83	.92	.90	.86	.83	.81	.73	1.	.66	.80
c. in BMU		.14	.22	.06	.06	.06		.09			.16	.05
d. in CAC	.25	.15		.06		.02					.29	.07
e. other (specify): ______		.21	.11	.14	.25	.17	.08	.09	.13	.10		.07
2. I prefer to study:												
a. alone	1.	.76	.94	.78	.85	.94	1.	.81	.86	1.1	.95	.91
b. with one other person		.34	.17	.32	.46	.30	.03	.27	.17	.30	.25	.25
c. with more than one other person		.03		.04	.06	.03	.25			.05	.04	.05
3. When I study												
a. I like quietness	.75	.69	.83	.78	.91	.82	.83	.54	.65	.95	.50	.68
b. I like music	.25	.31	.22	.20	.31	.26	.25	.36	.26	.15	.95	.38
c. I like a buzz of background noise		.10	.17	.22	.09	.13	.08	.36	.13	.05	.04	.11
d. I can watch TV		.07		.02	.01	.02				.05	.04	.02
4. I prefer to study:												
a. at a large table (like those in the library)	.75	.34	.22	.24	.31	.29	.25	.45	.47	.40	.33	.38
b. at a small desk table for one		.31	.50	.34	.35	.34	.41	.27	.47	.45	.37	.41
c. in an easy chair		.38	.44	.32	.44	.38	.41	.27	.17	.45	.12	.26
d. lying down		.21	.06	.24	.19	.18	.08	.18	.17	.45	.16	.22
e. other (specify): ______	.25		.06	.22	.09	.11	.16		.04	.20	.08	.10
5. I learn best from:												
a. reading	.25	.55	.67	.60	.47	.53	.58	.27	.34	.85	.20	.46
b. listening		.38	.44	.50	.57	.49	.41	.36	.39	.65	.33	.43
c. discussing	1.0	.59	.56	.54	.63	.59	.83	.63	.39	.55	.41	.52
d. thinking	.25	.34	.22	.40	.28	.31	.58	.27	.21	.50	.25	.34
e. writing	.50	.24	.33	.22	.19	.23	.41	.36	.17	.45	.37	.34
f. watching TV, movies, etc.		.10	.11	.02	.03	.04			.13		.04	.05
g. other (specify): ______		.03	.06	.08	.03	.04	.08					

STUDYING BEHAVIOR QUESTIONNAIRE

Question: (One or more choices allowed)	Response Distribution by Sex/Class Females						Males					
	Gr	Sr	Jr	So	Fr	Tot	Gr	Sr	Jr	So	Fr	Tot
6. I use the library:												
a. less than one hour per week	.25	.41	.28	.66	.06	.56	.08	.45	.30	.60	.45	.40
b. 1-5 hours per week	.50	.41	.56	.34	.04	.41	.58	.45	.43	.30	.37	.41
c. 5-10 hours per week	.25	.14	.17	.06	.03	.07	.03	.18	.30	.20	.12	.22
d. 1-20 hours per week		.07				.01			.13			.03
e. more than 20 hours per week			.06			.00	.08		.13			
7. I study on the average:												
a. less than one hour per day (5 hours per week)		.17	.06	.18	.02	.18	.03	.27	.34	.20	.41	.32
b. 1-2 hours per day (10 hours per week)	.50	.34	.22	.30	.04	.35	.03	.81	.34	.55	.45	.47
c. 2-4 hours per day	.25	.45	.50	.44	.35	.40	.41		.21	.25	.12	.20
d. 4-6 hours per day		.03	.17	.18	.09	.11	.08	.09	.04	.05	.08	.06
e. 6+ hours per day	.25		.06		.01	.01						
8. I refer to "reserved" books:												
a. before tests only	.25	.34	.39	.14	.07	.17	.03	.18	.30	.20	.20	.24
b. before classes for which they are assigned	.50	.59	.44	.50	.45	.49	.66	.45	.30	.45	.16	.25
c. quite often purely from interest in the subject	.00	.10	.06	.04	.10	.07	.16	.27	.13	.00	.12	.12
d. never	.00	.10	.22	.40	.44	.33	.08	.27	.21	.50	.37	.31
9. The books I check out from the library are:												
a. those assigned by instructors	.25	.45	.39	.20	.29	.30	.08	.27	.21	.30	.33	.25
b. those assigned or suggested by the instructor	.00	.31	.28	.39	.33	.41	.41	.54	.26	.25	.29	.32
c. miscellaneous books on topics in which I am taking classes	1.0	.55	.44	.52	.27	.43	.91	.81	.17	.55	.20	.44
d. books of potential general interest I find while browsing among the shelves	.00	.24	.17	.28	.38	.29	.41	.09	.43	.40	.37	.25
10. While studying:												
a. I like to eat or drink	.50	.41	.56	.46	.63	.53	.58	.27	.30	.33	.45	.38
b. I like to smoke	.25	.03	.17	.16	.25	.17	.16	.18	.26	.05	.08	.14
c. I like to talk and/or discuss	.50	.28	.33	.20	.31	.27	.03	.18	.17	.25	.16	.21
d. I like to take frequent breaks	.50	.41	.33	.52	.42	.44	.58	.63	.47	.85	.41	.57

STUDYING BEHAVIOR QUESTIONNAIRE

Response Distribution by Sex/Class

Question: (One or more choices allowed)	Females						Males					
	Gr	Sr	Jr	So	Fr	Tot	Gr	Sr	Jr	So	Fr	Tot
11. I read:												
a. only books assigned or suggested by instructors	.33	.45	.39	.38	.54	.52	.16	.36	.56	.60	.37	.44
b. "academic" books, other than assigned readings (e.g. literature, philosophy, art, criticism)	.30	.41	.33	.34	.36	.36	.50	.45	.21	.35	.16	.30
c. serious books of current interest (e.g. ecology, population control, politics, etc.)	.20	.28	.44	.28	.30	.34	.83	.54	.30	.50	.25	.43
d. "light" fiction (e.g. science fiction, detective novels, etc.)	.23	.31	.39	.38	.47	.44	.41	.45	.13	.25	.50	.33
12. I discuss class materials (not instructors or their methods) with others at other than class times:												
a. quite often (3+ times a day)	.03	.03	.22	.24	.13	.15	.08	.27	.08	.00	.16	.11
b. frequently (1-2 times per day)	.25	.34	.39	.34	.47	.44	.66	.36	.26	.40	.29	.36
c. occasionally (1-2 a week)	.40	.55	.44	.42	.47	.55	.41	.36	.52	.60	.54	.51
d. never	.03	.03	.00	.08	.04	.05	.00	.00	.04	.10	.04	.04
13. I go to the library:												
a. to browse through the stacks	.4	.28	.00	.18	.20	.23	.25	.18	.13	.20	.08	.15
b. to get peace and quiet	.1	.14	.17	.10	.23	.18	.08	.18	.17	.25	.25	.20
c. to study	.33	.45	.67	.34	.54	.54	.75	.45	.13	.65	.41	.44
d. only when I have to	.35	.48	.44	.60	.48	.58	.41	.36	.30	.55	.45	.42
14. The amount of time I spend on class-related school work per week is:												
a. 15-18 hours	.23	.31	.17	.60	.61	.55	.25	.45	.65	.75	.62	.58
b. 18-24 hours	.23	.31	.33	.28	.22	.33	.58	.18	.21	.25	.20	.26
c. 24-36 hours	.13	.17	.22	.20	.04	.24	.08	.09	.08	.15	.12	.11
d. 36-48 hours	.75	.10	.22	.06	.03	.09	.16	.18	.00	.00	.00	.04
15. In college:												
a. I am studying more than I thought I would have to	.40	.55	.28	.17	.16	.33	.08	.09	.21	.30	.12	.15
b. I am studying less than I thought I would have to	.30	.41	.22	.40	.41	.44	.50	.54	.47	.30	.45	.44
c. I am studying about as much as I thought I would have to	.30	.41	.50	.52	.51	.55	.50	.36	.17	.60	.41	.40

STUDYING BEHAVIOR QUESTIONNAIRE

Response Distribution by Sex/Class

Question: (One or more choices allowed)	Females Gr	Sr	Jr	So	Fr	Tot	Males Gr	Sr	Jr	So	Fr	Tot
16. When I study:												
a. I enjoy what I am doing	.40	.28	.67	.36	.33	.40	.03	.36	.21	.35	.16	.26
b. I would rather do something else	.35	.48	.39	.50	.41	.47	.41	.72	.34	.40	.37	.42
c. I do not enjoy it	.03	.03	.17	.02	.11	.08	.41	.09	.04	.15	.08	.13
d. I feel no sense of accomplishment	.03	.03	.17	.18	.05	.10	.16	.09	.13	.25	.08	.14
e. I have a feeling of accomplishment	.4	.55	.39	.46	.67	.63	.91	.45	.52	.60	.50	.57
17. I find academic work:												
a. very stimulating	.33	.45	.39	.28	.45	.46	.41	.45	.30	.35	.16	.31
b. unexciting, but necessary	.15	.21	.50	.56	.38	.44	.03	.54	.30	.65	.45	.45
c. unexciting, but relevant	.33	.45	.33	.14	.41	.39	.66	.27	.34	.35	.29	.35
d. boring and irrelevant	.075	.10	.06	.08	.07	.09	.16	.09	.08	.10	.08	.10
18. If I want to investigate an idea:												
a. I know exactly how to utilize library services	.23	.31	.39	.36	.22	.34	.75	.45	.43	.35	.41	.45
b. I have a vague notion of how to got information in the library	.43	.59	.50	.62	.72	.72	.03	.45	.47	.65	.41	.47
c. I always seek help from others	.13	.17	.22	.08	.33	.24	.08	.09	.04	.30	.12	.13
d. I do not try to use the library	.00	.00	.00	.02	.07	.03	.00	.00	.00	.05	.08	.03
19. This semester I spent on academic (i.e. course-related) books												
a. $10-$25	.05	.07	.11	.02	.02	.04	.16	.09	.04	.00	.08	.06
b. $25-$40	.08	.10	.33	.20	.16	.17	.03	.18	.13	.10	.04	.13
c. $40-$55	.40	.28	.44	.36	.35	.37	.50	.18	.26	.35	.45	.35
d. $55-$70	.28	.38	.11	.34	.29	.39	.00	.36	.39	.50	.20	.31
e. $70 +	.10	.14	.00	.10	.25	.18	.08	.18	.04	.10	.20	.01
20. During this semester I have spent on books for pleasure or non-course-related books												
a. Less than $10	.63	.07	.83	.86	.94	.88	.25	.63	.60	.95	.75	.67
b. $10-$25	.75	.17	.17	.14	.13	.15	.50	.36	.17	.10	.20	.27
c. $25-$40	.00	.10	.00	.04	.01	.03	.00	.00	.08	.00	.04	.03
d. $40-$55	.00	.00	.00	.00	.00	.00	.03	.00	.04	.05	.00	.03
e. $55-$70	.00	.00	.00	.00	.00	.00	.16	.00	.00	.05	.00	.03
f. $70 +												

Support Paper No. D.(4)

QUOTATIONS ON THE FUTURE

by

George Roseman

QUOTATIONS ON THE FUTURE

"Toward the Learning Society, 1996 A.D." *College and University Business*, September 1971.

1. From the Introduction: Society in 1996 will be more nearly the global society of life-long learners: Plato's academy and Hutchins' learning society may yet be attained; the future will be more rational and more humane--because it must be. The future can be like the present only more so--more crowded, dirtier, noisier, more riven by conflict and confusion. It can be, and there are prophets to say it will be. It does not have to be.

2. From the interview with Robert Theobald: How do we create new institutions for the Communications Era? Let me first point out why the Industrial Era cannot continue. Our new knowledge of social and physical sciences shows that if systems are to survive they must ensure four things: accurate movement of information, decision making to ensure correction of divergencies from desired trends, prevention of growth beyond the capabilities of the system, and prevention of overload of decision-making capacity. Our present political, economic and societal systems, including almost every level of education, breaks every one of these systematic requirements. We justify inaccurate movement of information under three names: public relations, advertising and management of news. Through centralized government we prevent people from being more responsible. The ecology crisis has pointed out that we are not living within the size of our system: America should not be using 60 per cent or so of the world's natural resources. Finally, in terms of input and output, the hierarchical structure of our corporations, our universities, and our political institutions require that single individuals or small groups make decisions, when it is humanly impossible for them to be aware of all the relevant information.

   How will institutions of higher learning function in the future Communications Era?

   Theobald: Education will be a lifelong pursuit. Education will be considered the process of providing each individual with the capacity to develop his potential to the full. This requires that we enlarge the individual's perceptive ability by providing a sufficiently wide range of diversified societal environments so that the talent of all can be used. The emergence of the Communications Era based on full education means the end of the Industrial Era based on full employment. The Industrial Era required that everybody toil; the Communications Era will allow everybody a reasonable standard of living without toil but with self-chosen work.

   Now to get back to your original question: How will institutions of higher learning function in this future community? I see only two means by which the universities and colleges will survive in the future. We will perceive these better if we look first at why many institutions are going to die in the Seventies. The most obvious reason is that the financial crisis is much more serious than anyone is willing to discuss. It will get worse because large numbers of middle class parents aren't going to be able to send their children to schools as tuitions increase. Also increasing numbers of the brightest kids are deciding that they can find their education in a different way. I think a lot of other youngsters are only staying in college because there are few options to do otherwise. But this is changing, partly because people will not need a B.A. or a Ph.D. to get a job, but also because society is opening up and there are increasingly varied ways to live.

I can see only two ways in which the schools can get out of this bind. The first way is for the university to become the brains of the area in which it is located. That means you bring in people to teach who live in the area. The whole idea that the professor has to be a full-time educator is ridiculous. How much better, both economically for the institution and for the psychological growth of the students, to bring in engineers, architects, lawyers, bankers and writers who are living in the real world and who, therefore, have to teach out of reality. The students also must become more integrated into the community. The student body will not be limited to ages from 18 to 22. The extraordinary distinction between education and continuing education will be eliminated and the institution will melt back into the town.

The other thing a university can do if it wishes to survive during the next 25 years is to begin to specialize like the University of Wisconsin at Green Bay. . . to deal with a particular problem/possibility center. Green Bay's emphasis is environment; a variety of skills--sciences, social science, the arts--focus on that area.

3. From the interview with Harold Taylor: The archaic and constricting paraphernalia of a formal curriculum centered around grades, three-credit courses, 120 credit B.A's, and the lecture system must be replaced by student-oriented programs, tutorials, work-study projects, and dedicated teachers.

What is the single thing most wrong with our educational system?

Taylor: Its view of the nature of the human species. Education today attempts to departmentalize the mind and functions of man. In the beginning these artificial separations of knowledge were helpful as epistomological outlines. But at this stage of the development of our educational system, they merely obstruct interdisciplinary thinking, in most cases. This whole rationale that science-oriented students tend to have objective, analytical minds while those in humanities have subjective minds is pure fallacy. It exists in the sense that many college students, whatever their orientation, are incapable of deep intuitive thinking. But this is because the educational system operates in such a way that it dampens down the creative energies. Going to class five times a week and listening to 15 lectures and being tested on the contents of the lectures and the text books were purposely designed to defeat the creative energies that students all have within them in some degree. We train people to separate these parts of their lives, but it is not inherent in the human mind. We think with our entire body, so it is the total thing, inside and outside of your skin, that really decides whether you're capable of thinking.

4. From the interview with Gwyn Jones-Davis: "We are at the crossroads now. If higher education is to exist in 1996, and, perhaps if the world is to exist, we must dismantle our institutions stone by stone and permit a new form of learning to take place. We must permit our students to get to know themselves and trust their inner, healthy motivations."

5. From the interview with Alvin Toffler: In "Future Shock" you say that the prime objective for education in the super-industrial age must be to increase the individual's cope-ability, the speed and economy with which he can adapt to continual change. Isn't that what our educational system is attempting to do now?

   Toffler: No. . . . . What passes for education today, even in our "best" schools and colleges, is a hopeless anachronism. Government ministries, churches, the mass media--all exhort young people to stay in school, insisting that now, as never before, one's future is almost wholly dependent upon education. Yet for all this rhetoric about the future, our schools face backward toward a dying system. Their vast energies are applied to cranking out industrial man.

   It was for this reason that education, in its very structure, simulated industrialism. The most criticized features of education today--the regimentation, lack of individualization, the rigid systems of seating, groupings, grading and marking, the authoritarian role of the teacher--are precisely those that made mass public education so effective an instrument of adaptation for its place and time.

   Today society needs an educational approach that is the antithesis of the one developed for industrialism, and the young people are somehow almost instinctively aware of this. The difficulty is that those in charge of the institutions were raised in the industrial age and still think there is value in producing industrial man.

6. From the article by Frank K. Kelly: So the great issues of education in 1996 could be summed up in the great issues that troubled people in the year 96 and would confront people in 2096 and all the centuries to come:

   "What should a man or a woman know to be wise?

   "What kind of wisdom could bring happiness--or keep open the pursuit of happiness?

   "What kind of faith could bring courage to step into the unknown--to keep man and women leaping, generation after generation, into the swirling darkness of uncertainty, into the clouds of change?"

   Not to move was to make a choice. To move was to change the future. In 1996, man was moving faster and faster. He had chosen to be aware of heights and depths--and he was becoming aware of more and more.

7. From the article by Robert Maynard Hutchins: We must look forward to an immense decentralization, debureaucratization and deinstitutionalization if we are to have a learning society. Here technology can help us. The electronic devices now available can make every home a learning unit for all the family. All the members of the family might

be continuously engaged in learning. Teachers might function as visiting nurses do today--and as physicians used to do. The new electronic devices do not eliminate the need for face-to-face instruction for schools, but they enable us to shift attention from the wrong question, which is how can we get everybody in school and keep him there as long as possible, to the right one, which is how can we give everybody a chance to learn all his life?

The new technology gives a flexibility that will encourage us to abandon the old self-imposed limitations. They are that education is a matter for part of life, part of the year, or part of the day, that it is open in all its richness only to those who need it least, and that it must be conducted formally, in buildings designed for the purpose, by people who have spent their lives in schools.

. . . . .

Then there are cables, cassettes, computers and videotape. It is reported that a cable system is now being built in San Jose that will have 48 channels. It is hard to accept the proposition that all of these must be dedicated to the kind of triviality that is now the common fare on commercial television. The San Jose people would have to make a tremendous effort to avoid using some of these channels for cultural, artistic and educational purposes, and in particular for the discussion of political, economic and social issues.

I do not say we will use the new instruments technology has given us in order to create a learning society. I say only that we can. We can have a learning society. Its object would be to raise every man, woman and every community to the highest cultural level attainable. In such a society the role of educational institutions would be to provide for what is notably missing from them today, and that is the interaction of minds.

8. From the article by Michael Sheldrick concerning ideas of Richard Buckminster Fuller: It will have a comprehensive curriculum without disciplines as we now know them. Because automation will deliver great wealth there will be no need for the strong men of the past and no one to force students into specialties to intellectually castrate them.

   The university will not be filled mainly with young people in the age bracket of 18 to 25 as is the case now, but will cater to all ages. Because of the diverse needs of its new student body and its huge size, the university will be forced to utilize every form of new technology to serve its students. All will be thirsting for knowledge. University officials will regard themselves as middlemen in the educational process, disseminating knowledge and ideas to students. They will no longer think of themselves as dispensers of bitter, though eminently necessary, educational pills to resisting patients.

   The university will not regard itself as an institution, a physical entity, a builder and maintainer of dormitories, an upholder of morals, an indefatigable in loco parentis, but as an information utility. Many of its students may never appear on campus; instead, they will be studying at home, working with their computer terminals and light pens in a modern correspondence school setting. . . . Real education. . . will be something to which individuals will discipline themselves spontaneously.

Support Paper No. D.(5)

OPERATIONAL GAP BETWEEN HARDWARE AND SOFTWARE

by

David Downes

Chico State College
Memorandum

November 12, 1971

TO: Task Force
Integrated Support Program

George Arnovick
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David Downes
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FROM: David A. Downes, Dean
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I wish to address myself to a single issue at this time. This is the operational gap that very likely will arise between hardware and software. While my experience is limited in the area of an augmented communications approach to teaching environment, I have seen colleges tool-up for an integrated system only to get the machinery which is seldom turned on. I think we are in danger of this at Chico. I suggest that little attention has been paid to how much the faculty will go along with this and how much they can. I do believe that even where willingness is shown, nothing substantial can be done without a well developed in-service training program which will put within interested faculty's capabilities realistically the full use of an integrated system with classroom applications. Moreover since in my opinion the number of faculty who will show interest will be so small compared to the cost of establishing the system, some other incentives are going to have to be devised to induce faculty to enlarge their pedagogical approaches. Because of the imposing problems here which I do not believe will be adequately solved, I suggest we discuss some functional alternative for the hardware. Multiple use may be our insurance against faculty inactivity.

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